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Coworker Discretionary Support: Developing and Exploring a Construct

By
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Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Arts in Organizational Leadership
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ST. CATHERINE UNIVERSITY
.....
School of Business
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Master of Arts in Organizational Leadership

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Leadership Thesis on Coworker Discretionary Support: Developing and Exploring a Construct

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Abstract

Researchers and practitioners identify social support as an important part of organizational culture, contributing to an environment of psychological well-being and employee engagement. However, social support has been defined and measured inconsistently across studies. The purpose of this study was to explore the construct of coworker discretionary support (CDS), the support that peers offer voluntarily to help coworkers meet job challenges. Using a mixed methodological approach, I examined the types of CDS that employees experience and its value and meaning. I created a measure of CDS and examined the relationship between CDS and engagement as well as the impact of a style preference, relationship-orientation, on the CDS – engagement relationship. The results indicate that CDS is a valuable job resource and is significantly related to work engagement, regardless of how relationship-oriented an employee is. The final CDS instrument is a reliable method that researchers and organizational leaders may use in future research and to assess social support in an organization's environment.

Chapter 1. Introduction

“People don’t leave their jobs; they leave their bosses”

Type that phrase into Google and you will get 232,000,000 hits from leading business journals, management consultants, and organizational researchers. In the 30 years I have been employed, I’ve worked for some wonderful, competent, warm, and supportive bosses. And sometimes, I have not. It is important to have a competent boss and a good relationship with your boss. But, what if the majority of your time and interpersonal interactions at work are spent not with a boss, but with coworkers? Many employees directly serve a supervisor, but most of us serve other people (or things) and report to a supervisor periodically.

Humans are social creatures. We might differ in how many or how deep, but we value relationships. Certainly, individual differences exist, but people need positive, close, or at least civil relationships with the people we encounter on a day to day basis. On a personal level, I value having positive relationships with coworkers. It’s an advantage to have good friends at work, since that is where I spend most of my time. But more importantly, I need colleagues to whom I can turn for advice on and help with job tasks, organizational obligations, and how to deal with other coworkers, project directors, or the occasional unsupportive supervisor. It is also important to me to return the favor to my coworkers. My experience leads me to wonder, “Is it just me?” Is this type of discretionary coworker support important in general? Does it impact employee engagement?

There are many studies of employee engagement, job satisfaction, psychosocially safe environments, and organizational outcomes that include “social support” as a variable of interest. Meta-analyses suggest that social support, defined as support provided outside of the scope of normal job requirements, contributes to performance and engagement (see, for example,

Christian, Garza, & Slaughter, 2011). But, unlike technical bodies of knowledge and highly researched soft skills such as communication and conscientiousness, social support is not well defined nor is it conceptualized consistently across different studies. Because my interest was to evaluate the relationship between coworker support and engagement, it was necessary to define coworker support reliably and distinctly from supervisor support. That is, I identified coworkers' discretionary behaviors that employees experience as supportive and researched why or how it matters to recipients.

For the purpose of this study, I define social support as coworker discretionary support (CDS) - behaviors that coworkers voluntarily engage in in support of their peers. Drawing from the work of Ducharme and Martin (2000), I hypothesized that there are two primary types of social support that peers provide: Instrumental or task-oriented support and affective or emotional-oriented support. Engagement experts refer to engagement as something that is critical to organizational effectiveness, but that an organization cannot require (Sullivan and Simco, 2013). I believe this description is apt for the construct I am studying and therefore I specifically refer to discretionary support - that which is offered to colleagues beyond what the job requires. For example, an IT specialist helping you configure your print settings is within his/her scope of work and thus is not an example of CDS. The same person helping you carry boxes of paper reports from your office to a library would most likely be engaging in task-oriented CDS.

In their seminal work on leadership, Kouzes and Posner (2012) documented effective leadership by identifying concrete behaviors that leaders engage in, shifting the question of leadership from "what is leadership?" (a trait perspective) to "what do leaders do?" (a behavioral perspective). Their work is important in leadership development because it provides actionable recommendations to individuals preparing for leadership roles. Similarly, a robust, behaviorally-

based model of coworker support will provide actionable recommendations for individuals at all levels of an organization to promote a collegial culture and contribute to engagement. Therefore, my goal was to identify important supportive behaviors and develop a behaviorally-based measure of CDS.

There were two guiding principles in my approach: One is analogous to appreciative inquiry. Rather than focusing on negative behaviors such as bullying and incivility, or replicating existing research in that area, I examined the *supportive* role peers play. Second, I focused on *behavioral* descriptions of support. Many measures of social support ask employees if they feel valued or supported or ask them to make inferences about coworker (or supervisor) support. I was interested in understanding what it is that coworkers actually do (i.e., observed behaviors) that make individuals feel valued or supported or that facilitate their ability to do the job and stay engaged.

Once I operationalized a meaningful measure of coworker social support, I surveyed employees on the frequency and type of CDS they experienced, their level of employee engagement, and their relationship-orientation. If there is a relationship between CDS and work engagement, it may be stronger in individuals who are high on relationship-orientation and weaker in employees who are low on relationship-orientation. To measure relationship-orientation, I added an existing measure of relationship/task orientation, the Northouse Styles Questionnaire (Northouse, 2007), to the survey.

The results of this study have research and practical implications. The process of defining and measuring coworker support contributes to the theoretical understanding of that support and how it impacts organizational performance and culture. For example, a reliable measure is useful for future studies of the relationships among coworker social support and other variables that

precede, occur with, or result from work engagement. Furthermore, if coworker support is observable, measurable, and matters to engagement, then it matters for positive organizational outcomes and leaders should model and promote it.

,

Chapter 2. Analysis of Conceptual Context

Coworker interactions have likely increased in importance over the last several decades because of the prevalence of U.S. jobs that are collaborative in nature and require routine interaction with others in the organization. For example, organizations have increasingly shifted to team structures and flattened structurally; as a result, an estimated 90% of US employees have coworkers (Chiaburu & Harrison, 2008). In my own experience in a large organization and as a consultant and partner to other organizations, many of us work “horizontally,” that is, spending more time with our peers than our supervisors, be they in our local work units, across functions, or in revolving project teams.

Furthermore, humans are social creatures. Three basic psychological needs of employees, according to McDaniel (2011) are (a) competence, (b) autonomy, and (c) relatedness. Even in a country like the U.S. that values individualistic qualities such as self-reliance (Hofstede, 2011), the research shows that interpersonal connections and feeling respected, valued, and cared for relate to important organizational and individual outcomes (e.g., Ducharme & Martin, 2000; Anderson, Saribay, & Thorpe, 2008; Chiaburu & Harrison, 2008; Christian et al., 2011; Vinarski-Peretz & Carmeli, 2011; and McDaniel, 2011). In light of this research and because of the degree to which we interact with coworkers, I theorized that CDS specifically contributes to US employees’ engagement and is distinct from supervisor support. The purpose of this section is to: (a) Review research findings on social support and engagement; (b) theorize what comprises CDS; and (c) explain the role of psychological well-being and how that, in turn, motivates employees to overcome barriers, meet challenging work requirements, and stay or become more engaged in their work.

Research on Social Support and Engagement

Employee engagement has been conceptualized in many ways in research and in practice. Kahn (1990) conceived of it as a state of cognitive, emotional, and behavioral commitment to one's job. Since then, researchers such as Schaufeli, Bakker, and Salanova (2006) have conceptualized and measured it as a job oriented construct consisting of vigor, dedication to, and absorption in one's work. Jones & Hough (2013), Sullivan & Simco (2013), and Gallup (2013) have each conceptualized it as engagement targeted toward work or the organization and measured it according to their preferred theoretical definition. Saks (2006) and later Kittredge (2010) examined, measured, and found evidence supporting job- and organizational-engagement as separate constructs. Whether it targets work or the organization, these researchers have linked engagement to important business outcomes such as higher productivity, better customer ratings, and lower absenteeism.

Much of the engagement research to date that includes social support in the network of variables related to engagement suggests that it is a small, but important antecedent (or predictor) of work engagement, job commitment, and satisfaction, and thus is, at least indirectly, related to positive business outcomes. For example, in their meta-analysis, Christian et al. (2011) found that social support was a significant antecedent to engagement. Nimon, Zigarmi, Houson, Witt, & Diehl (2011) demonstrated that connectedness with colleagues and other forms of relatedness contribute to work passion. Yan & Su (2013) found that social support predicted job involvement. Gallup (2013) surveyed employees around the world and reported that a supportive work environment is an important component for engaged workers.

In reviewing this literature, I was left with questions about social support. These studies varied widely in how they operationalized support and in what context they studied it. Some studies measured coworker social support with a single or few items that ask employees if they

experience social support; others treated coworker and supervisor social support as one construct while others measured social support by asking about supervisor support. When Nimon et al. (2011) conducted meta-analysis of variables that contributed to work passion, they excluded several studies from their meta-analysis that only used one item to measure social support type constructs by rightly pointing out that “The practice of using single items to measure a construct can lead to serious misjudgment about the relative contribution of that construct...” (p.10). I would extend that argument by suggesting that using only two or three items is not much more reliable and presents the same risk. A short measure is likely to be unreliable and diminish the chances of finding an effect even if there is one (Murphy & Myors, 2004).

Researchers also varied in how they asked employees about coworker and supervisor support, sometimes asking about feelings of being supported, or about demonstrations of support, or simply employee perceptions of caring. Vinarski-Peretz and Carmeli (2011), for example, asked employees about their perceptions of coworkers care and support, while Ducharme and Martin (2000) unpack social support as a higher order construct that includes different manifestations, such as instrumental (task-oriented) and affective (emotional-oriented) support. Although an employee’s perceptions of support may influence engagement, in the absence of questions about coworkers’ behaviors, participants must make inferences about intent that are not necessarily supported. For the purposes of this study, I sought out information about the types of behaviors that employees experienced as supportive. This preference comes from my professional experience in training people to assess job applicants, employees, and leaders through instruments such as 360 degree feedback and selection testing, where we emphasize the need to base ratings on behaviors, not inferences.

Many studies have closely examined the meaning of social support and its impact in contexts outside the work environment while others studied it in work environments outside the U.S. For example, Semmer, Elfering, Jacobshagen, Perrot, Beehr, & Boos (2008) examined how recipients of social support perceive and value that support. Yan & Su (2013) examined social support, core self evaluations, and engagement in China. Although they do not specify who provides social support, their measure of social support was developed and validated specifically for Chinese culture and thus, is not assumed to reflect U.S. conceptions of support. Other studies include it as a contributor to a higher order construct (e.g., work characteristic) of interest related to engagement. As Chiaburu and Harrison (2008) point out, these authors' conceptual frameworks are focused on "other vantage points" (p. 1082). That is, the researchers are primarily interested in and focused on other constructs and, in most cases, social support was tangential to the main purpose of the study. For example, studies have examined social support primarily to better understand such constructs as personality, self-efficacy, conflict, and/or toxic environments. These studies are useful in that their results suggest that social support is meaningful to employees and may influence well-being, organizational commitment, and other variables that are similar to, but distinct from, engagement.

The purpose of this study, therefore, was to examine CDS – to understand what employees think it is, if and why it matters to them, and if it contributes to work engagement. My hope was that, by clearly defining it and measuring it, I could provide an instrument by which organizations and organizational researchers interested in engagement and organizational culture could measure it. I anticipated at least two categories of CDS behaviors, instrumental or affective. Further, I hypothesized that CDS is correlated to employees' psychological well-being and motivates employees to overcome barriers to successful performance, experience higher

levels of engagement, and reciprocate by providing support to their coworkers in turn. The following sections discuss the mechanisms by which CDS might lead to these positive, work-related outcomes. In particular, I describe psychological well-being, motivation, and reciprocity as they related to CDS.

Psychological Well-Being

According to engagement theorists, engaged employees bring something extra to their performance. To perform at their best, employees must be physiologically and psychologically fit for the work. The physical aspects may be apparent: Healthy enough to perform required labor, from lifting objects and operating machinery to sitting or standing to communicating. The psychological aspects are real, but not as obvious. They include the following types of cognitive skills: (a) Focusing on the task at hand; (b) remembering and applying rules, processes, and relevant technical knowledge; and (c) balancing multiple and competing priorities (Van de Ven, Vlerick, & de Jonge, 2008). To the extent that people are able to bring their full selves to work, that is, to be as distraction-free as one can reasonably be, employees need to have what social scientists call psychological well-being.

Psychological well-being is conceived of as a product of meaningfulness, safety, and availability. These concepts spring from Kahn's (1990) work on psychological meaningfulness and its relationship to whether employees engage or disengage. Seeing engagement as a temporal condition, Kahn (1990) theorized that "People employ and express or withdraw and defend their preferred selves on the basis of their psychological experiences of self-in-role" (p. 703). He further illustrates each of these concepts with the question an employee asks, unconsciously or otherwise, as depicted in Figure 1.

-
- How meaningful is it for me to bring myself into this performance (benefits or ROI)
 - How safe is it for me to bring myself into this performance (what are the guarantees)?
 - How available am I to do so (what are my resources)?
-

Figure 1. Psychological well-being (Kahn, 1990, p. 704)

Since 1990, behavioral researchers have explored these concepts further. Meaningfulness depends on the extent to which ones personal values and work purpose align (May, Gilson, & Harter, 2004). Psychosocial safety depends on the belief that the organization has systems in place to protect its employees' health and safety (Law, Dollard, Tuckey, & Dormann, 2011), or “social systems that are predictable, consistent, and nonthreatening” (Kahn, p. 704). Availability is an employee's ability to fully engage in or focus on the task at hand, regardless of distractors (Vinarski-Peretz & Carmeli, 2011).

The value of these combined states is that they facilitate an employee's ability to succeed at work in the face of difficult job demands such as work-life balance conflicts, work-work conflicts, and role ambiguity (Chiaburu & Harrison, 2008; Vinarski-Peretz & Carmeli, 2011). In light of these theories, it is likely that social support promotes psychosocial safety (creating the “nonthreatening” environment of which Kahn speaks) and that it may serve as a job resource (to be addressed later).

To the extent that characteristics in the work environment, such as social support, contribute to psychological well-being, employees are more likely to identify with their work group, department, and/or organization as a whole. This creates a sense of belonging and, as an individual increasingly identifies with the group, leads him/her to cooperate with group efforts even if they are not consistent with his/her own self-interests (Anderson et al., 2008).

Researchers in the occupational health arena have found that when employees perceive their coworkers and supervisors as being supportive, they believe their coworkers care for them, respect them, and share at least some of their values and interests. Under these circumstances,

employees experienced less role conflict or ambiguity and more positive attitudes. Additionally, employees were more creative, persistent in successfully completing tasks, and more likely to engage in organizational citizenship behaviors (Tsai, Chen & Liu, 2007; Chiaburu & Harrison, 2008; Fluegge, 2008; Wildermuth & Wildermuth, 2008; Vinarski-Peretz & Carmeli, 2011; Yan & Su, 2013). These findings that social support contribute to psychological well-being and group identification lead me to believe that CDS in particular could create an environment favorable to psychological well-being and group identification, and thus serve as an influencer of engagement.

Motivation

Motivation theories seek to account for what engages employees and stimulates us to perform at our best. Some of the more commonly known psychological theories include Herzberg's (1966) theory of hygiene-motivation, Maslow's (1958) Hierarchy of Needs, and job-demands resources (Crawford, LePine, and Rich, 2010). Herzberg determined that what satisfies us does not necessarily motivate us. A hygiene factor, typically an extrinsic motivator such as pay and vacation, tends to satisfy employees, but not necessarily engage them. In fact, it might reduce the passion around tasks that an engaged worker already has. In a discussion of motivation, McDaniel (2011) notes that when people were offered money to perform tasks they already found interesting, they focused more on the monetary reward and became less intrinsically motivated to perform those tasks. What Herzberg (1966) calls a motivator, on the other hand, is not necessary for satisfaction, but its presence increases engagement.

Maslow's Hierarchy of Needs (1958) identifies different motivators that fall on a continuum, beginning with such basics as food, sleep, and water, followed by health, security, and financial resources. Once those basic needs are met, people are motivated by higher order

needs such as family and friends, then respect and achievement, and finally, spontaneity, morality, and creativity. When one is anxious to secure employment and pay bills, engagement is not going to be a priority. In other words, according to Maslow's theory, once those lower order needs are met, it is likely an employee would quickly leave a satisfactory job if an opportunity arose to perform more engaging work.

These classic theories suggest positive relationships with coworkers may be valuable as intrinsic motivators for employees. Job-demands resources (JDR) theory provides a contextual basis for how coworker support, as an agent of psychological well-being, might influence performance and engagement as a job resource and how *lack* of support could be viewed as a job demand (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

JDR posits that the higher the ratio of job resources to job demands, the more successful an employee can be. Job demands require physiological and psychological effort and include workload, time pressure, dangerous conditions, and conflict. Job resources are the means by which job demands may be met, such as tools, safety equipment, training, autonomy, and feedback (Demerouti et al., 2001). Recent studies have further unpacked job demands into hindrances and challenges. Hindrances are the energy depleting job demands, particularly demands such as work-life conflict, role ambiguity, and difficult or uncomfortable conditions such as loud noises, physical strain, workplace bullying, and discrimination. Challenges (e.g. a unique problem or time pressure) can be stimulating and motivating (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010).

To the extent that resources meet or exceed demands, employees will be successful, satisfied, and/or engaged (Demerouti et al. 2001; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Crawford et al., 2010; Rousseau & Aubé, 2010; and Van den Broeck et al.,

2010). Conversely, researchers have linked excessive job demands, particularly hindrances, to stress, burnout, and depression (Ducharme and Martin, 2000; Ladd & Henry, 2000; Demerouti et al, 2001; and Van den Broeck et al., 2010).

While it is unclear whether a lack of social support may be a hygiene factor and thus, not a job demand, it is likely that its crueller siblings - incivility and overt hostility - would be hindrances. Although the focus of this proposal is on support, it is important to note that numerous studies demonstrate the detrimental effects of interpersonal conflict, workplace incivility, and bullying (Bruk-Lee & Spector, 2006; Law et al., 2011). Due to these documented negative relationships and because of the relationship between social support and psychological well-being, I believe it is reasonable to expect that CDS would have the opposite effect – that of a job resource and intrinsic motivator.

Organizational psychologists have extended the engagement research beyond measuring and managing engagement to acknowledge that it is not enough to have engaged employees; instead it is necessary to *enable* engagement (Sullivan and Simco, 2013). According to Sullivan and Simco (2013), if engaged employees face unreasonable barriers to performance, they will get frustrated and one of three things will happen: They will leave, disengage, or overcome the hindrances and continue as they were. Enablers include such things as additional resources, optimizing assignments to leverage employees' strengths and skills, and creating a supportive environment. In other words, enablers are job resources that help employees meet demands, overcome hindrances to optimal performance, and to become or remain engaged.

If CDS increases an employee's psychological well-being, as suggested earlier in this discussion, it is most likely an enabler, not only serving as a resource to meet job demands, but an intrinsic motivator that moves the employee beyond job satisfaction to engagement.

Reciprocity

Another benefit of coworker support is reciprocity. If coworker support is a job resource that contributes to an employee's ability to perform and increases engagement and positive attitudes, does it not make sense that an employee who experiences CDS will be more likely to also engage in CDS? Vinarski-Peretz and Carmeli (2011, p. 45) describe this sort of reciprocal behavior as "positive spirals, when a positive act is met with another positive act through organizational dynamics." In a separate study, Tsai et al. (2007) found support for the reciprocity of "helping behavior" by and toward coworkers. Ladd and Henry (2000) found that perceived coworker support was positively related to organizational citizenship behaviors directed toward individuals.

If there is merit to the idea that CDS increases engagement, it may further support the idea that CDS has a very important role in employee engagement. The purpose of the proposed study is to understand what CDS is, why it is important, and if it relates to an employee's level of engagement. However, if CDS operates the way I propose, it may also be an *outcome* of engagement. That is, if people are high CDS, that is, they receive a sufficiently high level of CDS from their coworkers, they will also provide discretionary support to their coworkers. Therefore, a continuous benefit of CDS may be that it generates an expanding and positive organizational culture of mutual support, increasing both psychological well-being and engagement.

Conclusion

In a symposium on employee engagement at the Minnesota Professionals for Psychology Applied to Work, McPherson (2013) stated that it is not just manager, leader, or employee who is responsible for employee engagement. All three contribute to engagement. And, engagement is not just about the relationship between any pair of those individuals. It is an "ecosystem" of

relationships. I am borrowing his phrase for this discussion because it perfectly captures how I believe CDS could contribute to an organizational culture. If CDS contributes to engagement and in turn, engaged employees are more likely to provide support to their coworkers, the cycle goes on.

Before examining the relationship of CDS to other variables or how levels of CDS in one person might increase levels of CDS across their organization, we need a robust measure of CDS. In my study, I researched the behaviors that comprise CDS and how they influenced an employee's experience of psychological well-being. Using qualitative interviews, I explored these ideas and used my findings to develop an instrument that measures CDS. Subsequent to that activity, I developed and administered a survey measuring CDS, engagement, and relationship-orientation which, as described earlier in this paper, may influence the relationship between CDS and engagement. As previous engagement research shows, there are many other factors that are significant predictors of engagement, such as effective leadership, enriching jobs, and development and growth. The purpose for examining this relationship narrowly was not to downplay how critical those other factors are. It was to explore engagement from the "theoretical vantage point"¹ of CDS and determine if CDS is an essential ingredient of employee well-being and tied to engagement for employees who work closely with or among coworkers.

¹ As described in Chiaburu and Harrison (2008, p. 1082) and page 8 of this proposal.

Chapter 3. Methodology

Research Questions

The central question of this research asks, what constitutes coworker discretionary support (CDS) and is it important for U.S.-based employees? To that end, I explored what kind of behaviors comprise CDS, as defined by employees themselves. Is CDS a single factor or a higher order construct containing multiple factors? Also, is it related to employee engagement. Finally, is it moderated by relationship-orientation? That is, is there a stronger relationship between CDS and engagement for people who are relationship-oriented and is it weaker for people who are low on relationship-orientation?

Methodology

I was interested in defining coworker discretionary support (CDS) in behavioral terms, understanding its value to employees, and exploring the relationship between an employee's experience of coworker discretionary support (CDS) and engagement. Although prior research has found a relationship between coworker support and psychological well-being, and between social support and employee engagement, there is not a clear and consistent conception of CDS and therefore no empirical evidence that it is related to engagement or other similar variables, at least, not in a work context in the U.S. Therefore, I conducted this study in two phases. First, I conducted qualitative research to develop a behaviorally-based measure of CDS, drawing from the research literature and from one-on-one interviews with employees from a variety of organizations in the U.S. Second, I administered a survey that included the CDS measure and existing, validated measures of the employee engagement and relationship-orientation. The following sections describe my approach, participants, measures, and analysis process for each phase in detail.

Phase I. Develop a measure of CDS

The first phase involved developing a questionnaire of CDS behaviors. This section describes the participant sample and the approach I took to develop the questionnaire.

Sources for measuring CDS

I performed a qualitative study, examining how social support has been measured in the past, in engagement, occupational health, and organizational citizenship research literature and by interviewing subjects about their experiences and perceptions of coworker support. My approach is described in more detail below.

Literature review. I searched for studies of coworker and social support in academic databases such as the American Psychological Association's database PsychInfo. Search terms included "social support", "coworker support", "organizational citizenship behavior" and "engagement". Although my focus is on behavioral statements of coworker support, I included in my review studies that measured the construct using perception-based items and studies that did not publish items because those studies provided useful conceptualizations of support and its benefits to employees. I analyzed the information to (a) identify the way in which CDS behaviors were typified and categorized and (b) identify CDS-like items or topics. For example, many items or situations documented in the literature were categorized as affective and instrumental. Furthermore, some items or situations fit better into personal- versus work-context support. I identified behaviorally-based items that could be adapted for this study and extracted information from perceptual items and organizational citizenship behaviors that could be adapted into behavior items.

Interviews. The purpose of the interviews was to collect examples of CDS behaviors and explore with the subjects how and why these examples were valuable. Interview participants

were recruited through my private and professional networks. The recruitment information conveyed to potential subjects is provided in Appendix A.

Participants. I interviewed twelve working professionals. Because many but not all employees in the U.S. spend more time working among their peers than with supervisors and direct reports (Sias, 2009), participants were from organizations in which they regularly interact with coworkers near or at their level in the organization who do not report to them and to whom they do not report. Because survey respondents would be asked about their level of engagement at their current job, I planned to limit them to employees with at least one year of tenure at their current organization. Therefore, I sought and included interview participants who were also employed by their current organization for at least one year. The final interviewees worked in the Upper Midwest, Northeast, or Mid-Atlantic. Interviewees represented a variety of organizations including private corporations, retail services, post-secondary educational institutions, the military, and civilian government agencies.

Interview protocol. All interviewees were asked the same set of questions. First they were asked to provide examples in which they received coworker support, describing the situation, type of support provided, and the outcome. Further, they were asked if they requested support or were offered it, what their feelings were specifically around that support and more generally about coworker discretionary support in the workplace. Respondents described examples of coworker support that they had received and discussed why and how these events were valuable to them and influenced them at work. This type of cognitive interview approach (Desimone & Kerstin Carlson, 2004) was intended to help me understand if, and the extent to which, CDS behavior is desirable as an intrinsic motivator and job resource, thus promoting psychological well-being. For example, an interviewee may find discretionary support a “nice to have” event,

but not seek it out as a critical job resource. (See Appendix B for the interview informed consent and protocol documents.)

CDS data analysis and instrument development.

I content-analyzed the interviews by (a) reading interview notes, (b) developing preliminary categories, and (c) categorizing responses. I analyzed and coded the interview responses and mapped them against existing typologies from the literature review (e.g., instrumental and affective) and motivation theories discussed in the conceptual context of this study. Based on the results of both these data collection activities, I developed a preliminary CDS questionnaire to be administered via survey during Phase II. Drawing from the literature-based descriptions of support and interview-based examples, I developed 14 behaviorally-based statements of coworker support (e.g., I have coworkers who provide me with practical advice related to getting my work done) and two perceptual items of commonly measured emotional responses to coworkers support (e.g., I feel valued by my coworkers).

Reliability of an instrument is also a function of the number of items (e.g., a 30-item instrument is likely to be more reliable than a 3-item instrument). I was concerned about reliability of the CDS survey instrument for two reasons. First, reliability implies reproducibility and poor reliability would limit the usefulness of the instrument to future researchers or organizations interested in assessing CDS among employees. Second, in quantitative research, reliability is actually the ceiling to validity (Crocker & Algina, 1986). In addition to expecting a fourteen item measure to yield a sufficiently reliable instrument, each item corresponded to a distinct category of support described in the interviews and literature review, thus this instrument is deemed to be reasonably reliable.

Phase II. Survey of CDS, Engagement, and Related Variables

Phase two was the quantitative phase of this study. I administered and analyzed a survey to statistically explore (a) the measurement reliability and factor structure of the CDS questionnaire for the purpose of finalizing the CDS instrument, (b) if CDS is related to engagement, and (c) if an employee's tendency toward relationship-orientation moderates the relationship between CDS and engagement. This section describes participants, measures, and the data collection process.

Participants

Because of the number and type of statistical analyses, I sought a sufficiently large sample of respondents relative to the number of variables measured to support the results (Stevens, 1986; Murphy & Myors, 2004). For a factor analysis, Stevens (1986) recommends at least five respondents per item, with a minimum of 100 respondents. Because there were fourteen items on the CDS questionnaire, I targeted at least 100 respondents. To ensure employees had enough experience with their job to be engaged based on work related characteristics, I required that participants have at least one year of experience. Finally, because the level of engagement in a single organization could result in low variance (e.g., respondents have similar levels of engagement, reducing my ability to identify any relationship, even if one exists), I wanted to recruit survey respondents from multiple organizations. Accordingly, I distributed the survey to my professional and academic network, and asking professional colleagues and classmates to distribute the survey to their colleagues, hoping to get at least 5 respondents per item (i.e., I hoped for at least 175 respondents).

Measures

In addition to the CDS questionnaire, the survey included the following measures:

Employee engagement. Engagement is hypothesized to be positively related to a high CDS environment. For the purposes of this study, engagement was measured using the Utrecht short version (UWES-9) engagement questionnaire, which has demonstrated validity evidence for U.S. workers (Schaufeli & Bakker, 2003) (included in Appendix C, the Survey Instrument). The UWES-9 assesses job engagement. As described in the contextual context, there are many engagement scales that focus on different targets (e.g., job, organizational). Because this study conceptualizes CDS as a job resource, the UWES-9 is the most appropriate measure.

Relationship-orientation. I hypothesized that the relationship between CDS and engagement would be stronger for employees who are more relationship-oriented. Most measures of relationship-orientation include task orientation and are often developed in a leadership context. I measured relationship-orientation using the Styles Questionnaire (Northouse, 2007), which assesses relationship and task orientation scale (included in Appendix C, the Survey Instrument). While originated for leadership, the Styles Questionnaire assesses these orientations in a fairly generic style and has been used reliably to measure relationship-orientation in the general population (Mujtaba, 2011). In this questionnaire, respondents indicate the extent to which they agree or disagree with a series of statements that reflect orientation toward tasks and/or relationships. (The Northouse Styles Questionnaire is proprietary; permission for use from the publisher is provided in Appendix D.)

Data Collection

I administered an online survey that includes scales measuring each construct of interest. The survey consisted of following content:

Introduction: The introduction explained the purpose of the survey and provided information related to informed consent and estimated time. Respondents were informed that they could withdraw from the survey at any time and if they understood and consented to participate, they would indicate so by clicking on the “Next” button.

Screening questionnaire: The screening questionnaire included three screening questions that ensured respondents worked in the U.S., had been with their organization for a year or more, and had coworkers, as defined for the study. If a respondent clicked the “wrong” answer, they were sent to a disqualification page that thanked them for their time but explained that they did not meet the requirements.

Ratings section: The ratings section included scales to measure the focal constructs. Because scaling of the different constructs differed (e.g., “extent to which” scale versus “frequency”), each questionnaire was in a separate block.

Background questionnaire: An optional background questionnaire asked three work setting questions regarding the respondent’s organization, occupation, and industry. The questions and answer choices reflect Department of Labor Bureau of Statistics categories. Instructions indicated that this section was purely optional, unrelated to the purpose of the survey, and intended so that I might understand how representative the sample was of the general working population.

Completion page: This section thanked participants, provided information for contacting the researcher or the researcher’s advisor for information and reiterated the confidentiality of data.

I pilot tested the survey on a small group of employees in my network who study organizations (e.g., organizational psychologists; organizational development consultants). In

addition to reviewing content and responding to items, the pilot test participants provided feedback on the clarity of the instructions, rating scales, and functionality of the survey itself. Participants had an opportunity to write in any additional comments. Based on participant feedback, I modified the survey and prepared for implementation.

Once the survey was finalized, I broadcasted as arranged with people in my network. In addition, several of my interview subjects asked to take the survey and agreed to distribute it to their coworkers. I downloaded the response data and conducted preliminary (descriptive) analysis immediately after launch and at the end of the survey period. The purpose for collecting the first day's data was to identify any data problems and correct them immediately. I downloaded the final data set after two weeks. The total number of responses was 168.

Data Analysis

Upon downloading the final survey data, I cleaned and analyzed it (both described below) to examine the characteristics of the items and scales, and how they relate to each other. I analyzed the response data to examine the structure of CDS, refine the CDS questionnaire to eliminate poorly performing items and optimize reliability. Once I finalized the set of CDS items, I conducted multivariate analysis to examine CDS' relationship to engagement and relationship-orientation. This section describes the analysis I performed to explore these questions.

Preliminary analysis: Data cleaning and descriptive statistics. Before analyzing survey data, I conducted several iterations of review to ensure a clean data set. For example, I eliminated any respondent records that were missing responses on the CDS or engagement questionnaire. I reviewed responses for arbitrary response patterns (e.g., rating all items a "3") in which case I would assume the respondent did not take the survey seriously and eliminated

his/her record. I required complete data to conduct the factor analysis, so I further eliminated any record that was not a complete set of responses. The final number of usable responses was 133.

I computed frequency distributions and histograms to check the data for violations of assumptions of normality. I evaluated descriptive properties (means, standard deviations, range, and frequency distributions) of the background questions to determine the heterogeneity of the sample and its similarity to the population according to Department of Labor statistics. Finally, I calculated reliability for each of the scales to examine internal consistency.

Inferential analysis. I conducted two stages of analysis to answer the research questions. First, I tested one-factor and two-factor models of CDS and calculated final CDS scores based on the results. Then I tested the relationship between CDS and engagement, and among CDS, relationship-orientation, and engagement.

Before examining the relationship among the three constructs, I wanted to examine how well the items appear to measure CDS and understand the significance of the different categorizations, affective and instrumental, that emerged as distinctive in the literature. I did this first by performing a confirmatory factor analysis. There are a variety of techniques for examining the factor structure of a latent construct, such as coworker discretionary support, that is not directly observed, but measured by developing items that can be rated on a self-report basis. In cases where researchers have no theory of an underlying factor structure, principle component analysis and/or exploratory factor analysis is typically used. If researchers are interested in exploring both an underlying structure and creating the most parsimonious model – the fewest number of items that account for the most response variance, they would use principal component analysis (PCA), often followed by exploratory factor analysis (EFA) (Matsunaga, 2010). That is, PCA and EFA are data-driven techniques. Confirmatory factor analysis (CFA),

on the other hand, is a theory-driven technique, used when the researcher wants to test an *a priori* hypothesis about the factor structure of the data. Because I developed the questionnaire based on a qualitative study and developed items according to a hypothesized model of CDS, CFA was the appropriate technique to use (Matsunaga, 2010).

Conceptually, the CDS questionnaire was developed to measure 14 types of behavior that fell into two types of support identified in the literature review, instrumental and affective. However, two issues emerged from the interviews: First, I found it difficult to classify some examples of CDS that interviewees described and second, according to the interviewees' perceptions, all support activities seemed to (a) contribute to employees' ability to get tasks done, either by relieving pressure or contributing to quality improvements and (b) be emotionally meaningful. This seemed to suggest that CDS is a single factor. Therefore, I tested two competing models: CDS as a single-factor construct and as a two-factor construct.

Using the final version of the CDS measure, I regressed engagement on CDS, on CDS and relationship-orientation, and on an interaction variable of CDS by relationship-orientation. The purpose of a regression is to find the linear relationship between some dependent variable (such as engagement) and independent variables (such as CDS and relationship-orientation). The analysis yields information that, when plugged into an equation, can help predict the value of the dependent variable when only the independent variables are known. The standardized regression weights, for example, reflect how much the level of engagement will change for every unit change in CDS. The regression coefficient (R^2) represents how much of the variance in engagement is due to CDS. The "constant" represents the Y intercept (the value of Y when all other variables are "0") and the residual explains the amount of variance in engagement that is

not explained by the independent variables included in the analysis (Statistical Consulting Group, 2014).

My primary goal for these analyses was to examine if CDS relates positively to engagement. My secondary goal, assuming there is a strong relationship between CDS and engagement, was to determine the moderating effects of an employee's relationship-orientation score on the CDS-engagement relationship. My overall goal for the study was to develop a valid and reliable measure of CDS that is useful for research purposes, such as examining antecedents to engagement, organizational culture, etc. and practical purposes, such as evaluating an organization's social environment, the extent to which espoused values of collaboration fit practice, etc.

Chapter 4. Results

Phase I. Development of a CDS Instrument through a Literature Review and Interviews

Literature Review Results

From reviewing the literature on social support, engagement, and organizational citizenship behaviors, I found examples of supportive themes, supportive behaviors from the perspective of the recipient, and organizational citizenship behaviors (OCBs) from the perspective of the actor. I identified approximately 80 examples from twenty different studies and categorized them. Figure 2 provides samples of in the literature. As this list is exemplary, it illustrates the mix of supportive and antagonistic activities, items measuring behaviors and perceptions of support, and OCBs.

Upon reviewing and categorizing the topics in the literature, I identified the following taxonomy of behavior that appeared to reflect the full scope of CDS behaviors. The taxonomy is presented in Figure 3.

Chiaburu, & Harrison (2008)	Cheers me up
Chiaburu, & Harrison (2008)	Is understanding or sympathetic
Ducharme, L. J., & Martin, J. K. (2000)	Coworkers are friendly to me
Fearon, McLaughlin, & Morris (2013)	Rewarding relationships via positive interactions with coworkers
Fluegge (2008)	Throwing parties to recognize accomplishments
Fluegge, E. R. (2008)	Sharing food with coworkers
Fluegge, E. R. (2008)	Observing birthdays and other events
Fluegge, E. R. (2008)	Shows genuine concern and courtesy toward coworkers, even under trying situations
Gallup (2013)	Someone at work encourages my development
Gallup (2013)	Someone at work cares about me.
Ladd, & Henry (2000)	My coworkers care about my opinion
May, Gilson, & Harter, (2004)	My interactions with my coworkers are rewarding
May, Gilson, & Harter, (2004)	I sense a real connection with my coworkers

May, Gilson, & Harter, (2004)	My coworkers really know who I am
May, Gilson, & Harter, (2004)	My coworkers and I have a mutual respect for one another
Ozer (2011)	Help others who have been absent
Rousseau, & Aubé, (2010).	My colleagues care about my physical and mental well-being
Rousseau, V., & Aubé, C. (2010)	My colleagues recognize my contributions and my strengths
Semmer, Elfering, Jacobshagen, Beehr, & Boos, (2008)	Companionship
Semmer, Elfering, Jacobshagen, Beehr, & Boos, (2008)	Comforting behavior
Tsai, W., Chen, C., & Liu, H. (2007)	Coworker assisted with personal matter
Tsai, W., Chen, C., & Liu, H. (2007)	My colleagues provided me with encouragement when I was down.
Vinarski-Peretz, & Carmeli, (2011)	My colleagues strongly consider my goals and values
Vinarski-Peretz, & Carmeli, (2011)	My colleagues show very little concern for me
Williams, & Anderson, (1991)	Takes time to listen to my problems and worries
Williams, & Anderson, (1991)	Takes a personal interest in me

Figure 2. Examples of support in the literature

Category	Subcategory
Affective	Unsolicited help
	Empathy
	Sacrifice (of time or resources)
	Acknowledgement (personal)
	Acknowledgement (work)
	Encouragement
Instrumental	Deadline-oriented
	Content-oriented
	Covering for
	Mentoring: Task-specific
	Resource sharing
	Mentoring: Career specific
	Personal

Figure 3. Literature based taxonomy of CDS

Interview Results

Twelve interviewees participated in the study, providing 16 examples of coworker support. The interviewees had been working in their current organizations between two and twenty-one years, with a mean tenure of 12.17 years. As described in the methodology section, they represented private non-profit, commercial retail, state and Federal government, and the military. To get a sense of their working environment in relation to coworkers and other members of the organization, I asked about their work space. Work spaces varied; seven interviewees worked in offices and three of those seven shared office space with coworkers. Three interviewees worked in cubes, one moved between a warehouse and retail space, and one telecommuted from a home office.

During the interviews, each participant described one or two examples of support that coworkers offered that they did not have to. Then interviewees discussed both specific and general views on the value and meaning of the examples and of coworker support generally. Based on the literature, I identified two major categories of support: Instrumental and Affective. Most examples fit neatly into one or the other; however, there were two examples that crossed both categories. Figure 4 presents the types of examples by category.

Most of the coworkers (10) described in the examples were team mates, or coworkers in the same department as the interviewee. Four worked outside the interviewee's department but in the same division or retail store. Two examples came from colleagues outside the interviewee's organization with whom the subject worked frequently as part of his/her job. Those colleagues were peers. In half the examples, the interviewee sought out help and in the other half, the coworker offered unsolicited help.

<u>Instrumental</u>	
2	Brainstorming on a work process or product with Subject
7	Performing a task for Subject
3	Providing job-related resources of information
<u>Affective</u>	
2	Providing sympathy or encouragement during a challenging work event
<u>Instrumental and Affective</u>	
1	Advocating to a supervisor on behalf of Subject
1	Providing sympathy and resources for dealing with a challenging life event

Figure 4. Interview based coworker support results

Based on the literature review, I expected that the examples would be a fairly equal mix of instrumental and affective support. In fact, the majority of examples were directly related to helping with tasks. For example, two interviewees described product development or process challenges about which their coworkers brainstormed with them in one case to come up with resolution and in both cases to provide feedback and clarity about the interviewee’s ideas. Several interviewees described how coworkers volunteered to perform tasks with or for them. For example, one interviewee had to move offices while suffering from a physical disability. Without asking, her coworkers packed up her equipment and belongings and moved them for her. In another case, the coworker spent his own time developing an online database to create a more efficient process for the interviewee.

In all cases, interviewees were grateful for the help and support. Those who received affective support felt “empowered” or “able to move past [or compartmentalize] the negative feelings.” In one interviewee’s words “work was my safe place.” Every person who described instrumental support talked about how it helped “get the job done.” One mentioned that she

learned from task-related support and it helped her be a better performer. These same interviewees also had strong emotional reactions to instrumental support. The interviewee colleague developed an online database was “thrilled!” Several of them used phrases like “it was relief”, “it took the burden off” and “it helped me focus” suggesting that it serves as a resource that counters job challenges, as described in the conceptual context.

The interviewees’ descriptions of the example-specific value of coworker support and their general views on coworker support were overlapping. In part, this may be a methodological issue. After asking people to provide examples of support they received and describe how they were valuable, it is unsurprising that they were generally enthusiastic about the importance of camaraderie and collaboration in the workplace. However, while everyone appreciated coworker support, they were not, as a group, unanimous in opinion. Of the twelve interviewees, eight said they preferred it, describing it from “important” to “critical” to a “must have” to be happy at work. One interviewee described it as creating a working environment in which she felt “herself”. Other interviewees said it was a priority, that it made work feel like a family, or that it was as, if not more important than money. Interviewees sometimes conflated friendship. One interviewee specifically said “it’s kind of the same thing.” On the other hand, another interviewer said “I don’t think everyone needs to be all buddy-buddy, but professional working relationships are important.”

Four interviewees did not think about coworker support as a workplace necessity. Two interviewees indicated that they did not consider it something they would look for in a job and two interviews offered a qualified “depends” in their response. One of the “depends” interviewees suggested that if one’s supervisor is bad, good coworkers can make all the difference but otherwise, it is not something she would need. The other interviewee said that if

one loves one's job, as long as coworkers were not unsupportive or making one's work hard, it would not matter. Furthermore, people for whom it was extremely important did have some concerns. One interviewee said she worried about annoying people, because she always asks for help and looks for opportunities to collaborate. Another said he felt indebted. At the same time, he appreciated the cohesion of the employees in his division and spoke of it feeling like "one team" instead of many.

As anticipated in the conceptual context, there were at least two types of CDS, instrumental and affective. These two types were treated as significant and distinct in the organizational and engagement literature. Interestingly, the interviews suggested something slightly different. The majority of respondents described instrumental support. That is, most examples of coworker support were clearly task-oriented, such as brainstorming on ways to perform challenging tasks, improving a product, developing efficient work tools, and performing work to support an interviewee who had a heavy workload or had to miss work. Of the 16 examples provided by the 12 interviewees, only three involved affective support. However, the interviewees described the instrument support as valuable in affective terms, regardless of the type of support (instrumental versus affective). They did value the impact of support on "getting the job done" but they talked about its contribution to their emotional state.

Finalizing the CDS Questionnaire

While the interviews hinted that CDS is likely to be one factor, I maintained the classification of items identified based on the literature review and planned to use the survey data to confirm (or disconfirm) these findings. Most coworker support examples did fit into the structure I identified in the literature. I also added one new subcategory, "Advocacy" and a corresponding behavioral item for the survey: "I have coworkers that advocate for me to others

in the organization.” I tentatively categorized it into the instrumental category; however, I felt this was a situation where the factor analysis would best determine where it should be categorized if, in fact, the results yielded separate factors.

In addition, I added two perception items to the survey to examine the extent to which respondents’ perceptions of support are consistent with how much they experience. The interview phase suggested this was the case, but as described earlier, the sequence of the questions (one after the other) limits interpretation. On the survey, these items (15 and 16 in Figure 5) were embedded in a separate section of questions.

I programmed a survey that included all the assessments and had four individuals pilot test it. Two pilot testers reviewed the survey for editorial, instructional, and functionality issues. Two pilot testers are organizational development specialists and reviewed the survey for content. Based on feedback, I edited instructions and revised the wording of two items (3 and 7) to distinguish them more clearly from one another. The final CDS questionnaire is presented in Figure 6.

<i>ID</i>	<i>CDS Item</i>	<i>Category</i>	<i>Subcategory</i>
1	I have coworkers who offer to help me without being asked.	Affective	Unsolicited help
2	I have coworkers who listen to me and show me sympathy when I am upset.	Affective	Empathy
3	I have coworkers who take time out from their work to help me.	Affective	Sacrifice time
4	I have coworkers who acknowledge my personal (non-work) accomplishments or milestones.	Affective	Acknowledgement (personal)
5	I have coworkers who congratulate me on my professional work accomplishments.	Affective	Acknowledgement (work)
6	I have coworkers who actively encourage me when I am struggling to do my best.	Affective	Encouragement
7	I have coworkers who help me when I have to meet an urgent deadline or my workload is heavy.	Instrumental	Deadline-oriented
8	I have coworkers who voluntarily help me accomplish challenging or unusual work tasks.	Instrumental	Content-oriented
9	I have coworkers who perform my work when I have to be absent.	Instrumental	Covering for
10	I have coworkers who provide me with practical advice related to getting my work done.	Instrumental	Mentoring: Task-specific
11	I have coworkers who share information, supplies, and other resources to help me perform my work.	Instrumental	Resource sharing
12	I have coworkers who provide me with advice and guidance to develop my skills and progress in my career.	Instrumental	Mentoring: Career specific
13	I have coworkers who perform personal (non-work) favors for me.	Instrumental	Personal
14	<i>I have coworkers who advocate for me to others in the organization.</i>	<i>Instrumental</i>	<i>Instrumental: Advocate</i>
15	I feel valued by my coworkers.	Psychological perception	Belonging
16	I trust my coworkers to support me in performing my job.	Psychological perception	Trust

Figure 5. CDS items

<i>ID</i>	<i>CDS Item</i>
1	I have coworkers who offer to help me without being asked.
2	I have coworkers who listen to me and show me sympathy when I am upset.
3	I have coworkers who take time out from their own work to help me complete my work.
4	I have coworkers who acknowledge my personal (non-work) accomplishments or milestones.
5	I have coworkers who congratulate me on my professional work accomplishments.
6	I have coworkers who actively encourage me when I am struggling to do my best.
7	I have coworkers who help me when my workload is too heavy to complete in a timely manner.
8	I have coworkers who help me accomplish challenging or unusual work tasks.
9	I have coworkers who perform my work when I have to be absent.
10	I have coworkers who provide me with practical advice related to getting my work done.
11	I have coworkers who share information, supplies, and other resources to help me perform my work.
12	I have coworkers who provide me with advice and guidance to develop my skills and progress in my career.
13	I have coworkers who perform personal (non-work) favors for me.
14	<i>I have coworkers who advocate for me to others in the organization.</i>
15	I feel valued by my coworkers.
16	I trust my coworkers to support me in performing my job.

Figure 6. CDS questionnaire for survey

Phase II. Results of CDS Survey

The CDS survey was administered over a two-week period. I distributed an invitation and survey link to a pool of individuals in my personal and professional network who agreed to invite people in their network to participate. A total of 168 participants completed the survey. After eliminating records with any missing data on the ratings portion of the survey, the number of respondents (N) was 133. Although the background items were not required, the respondents

who completed all items of the ratings section also completed the background questions. The responses are provided in Tables 1 to 3.

Table 1

Survey Respondents' Organizational Type

Organization	Frequency	Percent	Cumulative Percent
Private or public for profit	105	78.9	78.9
Nonprofit org	15	11.3	90.2
Education	5	3.8	94.0
Government civilian	8	6.0	100.0
Total	133	100.0	

Table 2

Survey Respondents' Industry Type

Industry	Frequency	Percent	Cumulative Percent
Other	12	9.0	9.0
Accommodation and food services	9	6.8	15.8
Law, public safety, corrections, and security	4	3.0	18.8
Management of companies and enterprises	2	1.5	20.3
Manufacturing	9	6.8	27.1
Protective services	1	.8	27.8
Public administration	3	2.3	30.1
Wholesale and retail trade	16	12.0	42.1
Transportation and utilities	5	3.8	45.9
Administrative and support services	7	5.3	51.1
Agriculture, forestry, fishing, and hunting	1	.8	51.9
Arts, entertainment, and recreation	11	8.3	60.2
Construction	4	3.0	63.2
Educational services	13	9.8	72.9
Financial Services	7	5.3	78.2
Healthcare and social assistance	14	10.5	88.7
Information Technology	15	11.3	100.0
Total	133	100.0	

Note. Respondents who indicated “Other” industries reported automotive, architecture, real estate, social sciences, and grocery.

Table 3

Survey Respondents' Occupational Type

Occupation	Frequency	Percent	Cumulative Percent
Other	14	10.5	10.5
Architecture and Engineering	2	1.5	12.0
Food Preparation and Serving Related	4	3.0	15.0
Healthcare Practitioners and Technical	8	6.0	21.1
Healthcare Support	5	3.8	24.8
Installation, Maintenance, and Repair	3	2.3	27.1
Legal	4	3.0	30.1
Life, Physical, and Social Science	1	.8	30.8
Management	17	12.8	43.6
Military Specific	1	.8	44.4
Office and Administrative Support	11	8.3	52.6
Arts, Design, Entertainment, Sports, and Media	7	5.3	57.9
Production	2	1.5	59.4
Protective Service	1	.8	60.2
Sales and Related	18	13.5	73.7
Transportation and Material Moving	1	.8	74.4
Business and Financial Operations	8	6.0	80.5
Community and Social Service	2	1.5	82.0
Computer and Mathematical	9	6.8	88.7
Construction and Extraction	2	1.5	90.2
Education, Training, and Library	13	9.8	100.0
Total	133	100.0	

Note. Respondents who indicated “Other” listed buyers, test developers, politicians, marketing, and social scientists.

Respondents' CDS item ratings followed a fairly normal distribution although responses tended to cluster more closely around the mean (average) score than a normal distribution and items had a negative skew. Although negative skew may sound bad, it simply means that most respondents experienced CDS on the higher end of the scale, between “sometimes” and “often” but closer to “often.” This is probably good news for organizations – that coworkers are providing support to one another. The one exception was item 13, which had a positive skew. Figure 7 presents a fairly typical histogram chart for these items.

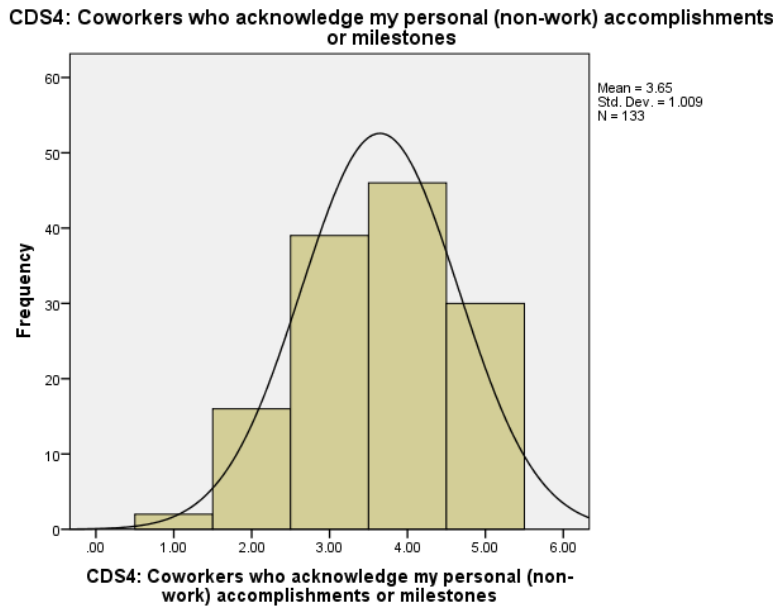


Figure 7. Exemplary histogram of a CDS item. The superimposed line is a normal bell curve intended to visually illustrate the item’s slight skew.

Descriptive statistics and correlations are provided in Tables 4 and 5. Because I sought to develop a reliable measure of CDS, I anticipated that items would correlate highly. The correlation matrix can provide some insight into factors, as well (Beaumont, 2012). That is, if there are two factors, affective items are more likely to have high intercorrelations with each other and low intercorrelations with instrumental items. All CDS items were significantly correlated as illustrated in Table 5. Two items, CDS9 (I have coworkers who perform my work

when I have to be absent) and CDS13 (I have coworkers who perform personal (non-work) favors for me) stood out as being the least correlated with the rest of the items, although they were still significant.

Table 4

Descriptive statistics for CDS items

Variable	N	Minimum	Maximum	Mean	SD
CDS1: I have coworkers who offer to help me without being asked	133	1.00	5.00	3.59	.89
CDS2: I have coworkers who listen to me and show me sympathy when I am upset	133	2.00	5.00	3.92	.91
CDS3: I have coworkers who take time out from their own work to help me	133	1.00	5.00	3.64	.89
CDS4: I have coworkers who acknowledge my personal (non-work) accomplishments or milestones	133	1.00	5.00	3.65	1.00
CDS5: I have coworkers who congratulate me on my professional work accomplishments	133	1.00	5.00	3.90	.92
CDS6: I have coworkers who actively encourage me when I am struggling to do my best	133	1.00	5.00	3.59	.99
CDS7: I have coworkers who help me when my workload is too heavy to complete in a timely manner	133	1.00	5.00	3.42	1.06
CDS8: I have coworkers who voluntarily help me accomplish challenging or unusual work tasks	133	1.00	5.00	3.45	.97
CDS9: I have coworkers who perform my work when I have to be absent	133	1.00	5.00	3.31	1.15
CDS10: I have coworkers who provide me with practical advice related to getting my work done	133	1.00	5.00	3.43	1.00
CDS11: I have coworkers who share information, supplies, and other resources to help me perform my work	133	1.00	5.00	3.86	.96
CDS12: I have coworkers who provide me with advice and guidance to develop my skills and progress in my career	133	1.00	5.00	3.37	.99
CDS13: I have coworkers who perform personal (non-work) favors for me	133	1.00	5.00	2.59	1.08
CDS14: I have coworkers that advocate for me to others in the organization	133	1.00	5.00	3.27	.99

Table 5

Correlation matrix of CDS items

Variable ^a	CDS1	CDS2	CDS3	CDS4	CDS5	CDS6	CDS7	CDS8	CDS9	CDS10	CDS11	CDS12	CDS13	CDS14
CDS1: Coworkers who offer to help me without being asked	1													
CDS2: Coworkers who listen to me and show me sympathy when I am upset	.556**	1												
CDS3: Coworkers who take time out from their own work to help me	.723**	.643**	1											
CDS4: Coworkers who acknowledge my personal (non-work) accomplishments or milestones	.532**	.733**	.616**	1										
CDS5: Coworkers who congratulate me on my professional work accomplishments	.517**	.576**	.632**	.713**	1									
CDS6: Coworkers who actively encourage me when I am struggling to do my best	.603**	.719**	.649**	.675**	.682**	1								
CDS7: Coworkers who help me when my workload is too heavy to complete in a timely manner	.650**	.490**	.595**	.494**	.477**	.624**	1							
CDS8: Coworkers who voluntarily help me accomplish challenging or unusual work tasks	.604**	.490**	.685**	.523**	.562**	.588**	.709**	1						
CDS9: Coworkers who perform my work when I have to be absent	.279*	.306**	.317**	.291*	.308**	.301**	.489**	.318**	1					
CDS10: Coworkers who provide me with practical advice related to getting my work done	.529**	.445**	.540**	.413**	.481**	.534**	.592**	.504**	.470**	1				
CDS11: Coworkers who share information, supplies, and other resources to help me perform my work	.584**	.506**	.563**	.568**	.525**	.469**	.563**	.492**	.402**	.659**	1			
CDS12: Coworkers who provide me with advice and guidance to develop my skills and progress in my career	.534**	.462**	.583**	.481**	.556**	.609**	.653**	.643**	.386**	.665**	.580**	1		
CDS13: I have coworkers who perform personal (non-work) favors for me	.293*	.327**	.311**	.396**	.387**	.424**	.269*	.293*	.248*	.337**	.297*	.333**	1	
CDS14: I have coworkers that advocate for me to others in the organization	.538**	.534**	.625**	.527**	.477**	.525**	.445**	.504**	.291**	.522**	.523**	.592**	.527**	1

^an=133** p < .001 level; * p < .005 level; ^an=133.

Reliability indicates internal consistency, or the extent to which an instrument consistently measures the same construct. It can be thought of in terms of (a) how likely one respondent is to repeatedly get the same score regardless of how many times s/he rates the items and (b) how likely two respondents are to get the same score when they experience the same level and types of support from their coworkers. I calculated the reliability of the CDS measure using Cronbach's alpha (alpha). The value of alpha can range from 0 to 1, with one being perfect reliability. For the current dataset, alpha was .933. The high alpha value is evidence that what the CDS instrument is measuring is likely to be a single factor and that the entire set of items is primarily measuring a single construct.

I conducted two preliminary tests to determine if it is worthwhile to examine the factor structure. First, I conducted the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA). The MSA value should be over .8 (Beaumont, 2012). The MSA value for the CDS data was more than sufficient, at .914.

A second test of appropriateness is parallel analysis. Before explaining this analysis, it is important to mention Eigenvalues. In factor analysis, eigenvalues indicate the amount of variance for which a factor accounts. Factors that account for a larger amount of variance are more meaningful than factors that account for smaller amounts of variance. A common rule of thumb in principle component analysis and factor analysis is to retain factors with an Eigenvalue of greater than 1 (a.k.a., The Kaiser-Guttman criterion); however, there is growing criticism in the literature about 1 being too low (Beaumont, 2012; Matsunaga, 2010).

Parallel analysis involves running an exploratory factor analysis on the sample data to generate Eigenvalues and comparing the results to a similar analysis on a parallel set of data. The parallel set of data is normally distributed, has the same number of observations as the referent data set, but with random values. The analysis runs 500 to 1000 times. If the Eigenvalue of a factor is higher for the referent data (in this case, my data) than for the random data and is above 1, the factor is likely to be meaningful. Because the parallel analysis required advanced statistical software programming skills, a statistician conducted the parallel analysis. The results are provided in Table 6. In the table, the first factor, with an Eigenvalue of 6.61 is significantly larger than the parallel factor. The second factor is larger by a small fraction but does not meet even the Kaiser-Guttman criteria, suggestion support for a one-factor model. We can clearly ignore subsequent factors (3 through 12).

Table 6

Parallel analysis results

Factor	CDS data	Random normal data
1	6.61	0.71
2	0.68	0.56
3	0.33	0.42
4	0.18	0.32
5	0.14	0.22
6	0.08	0.15
7	0	0.06
8	-0.03	-0.01
9	-0.12	-0.07
10	-0.14	-0.14
11	-0.15	-0.2
12	-0.17	-0.28

CFA Results

Before reporting results, some discussion about measurement error is needed. My original hypothesis, based on the literature review, was that each CDS item measures some distinct subcategory of CDS and that each subcategory reflected one of two CDS-related factors, affective or instrumental. Participant ratings on these items reflect CDS. But, there is always some measurement error in any questionnaire or instrument. Error in this sense is not a “mistake” but rather, some unique factor that impacts how a respondent rates items and how respondents may vary in their ratings of any given item (i.e., variance) (Crocker & Algina, 1986; Beaumont, 2012). When it comes to coworker support, for example, a contributing issue may be an employee’s world view. For example, an employee with a negative world view might always rate CDS items low while an employee with a positive world view might rate CDS items high. On the other hand, maybe there are multiple issues contributing to a person’s rating. Maybe that employee with a negative world view had a coworker go out of their way to do something especially nice for him/her. In this case, s/he might have been so pleasantly surprised she might rate a CDS item much higher. Or, perhaps all respondents for whom English is a second language misread the item. (Note that I tried to make the language as clear and straightforward to avoid this, but without a sensitivity review by linguists, it is difficult to ensure that I was successful.)

Because it is so difficult to predict all possible causes for “error”, yet error impacts the data, it is important to acknowledge its existence in the model. Factor analysis techniques take this error, or unique variance, into account. Thus, it is important to acknowledge that error by incorporating it into the model. Figure 8 graphically

illustrates a model that represents observed variables, latent factors that contribute to response variance, and error variables that contribute to response variance.

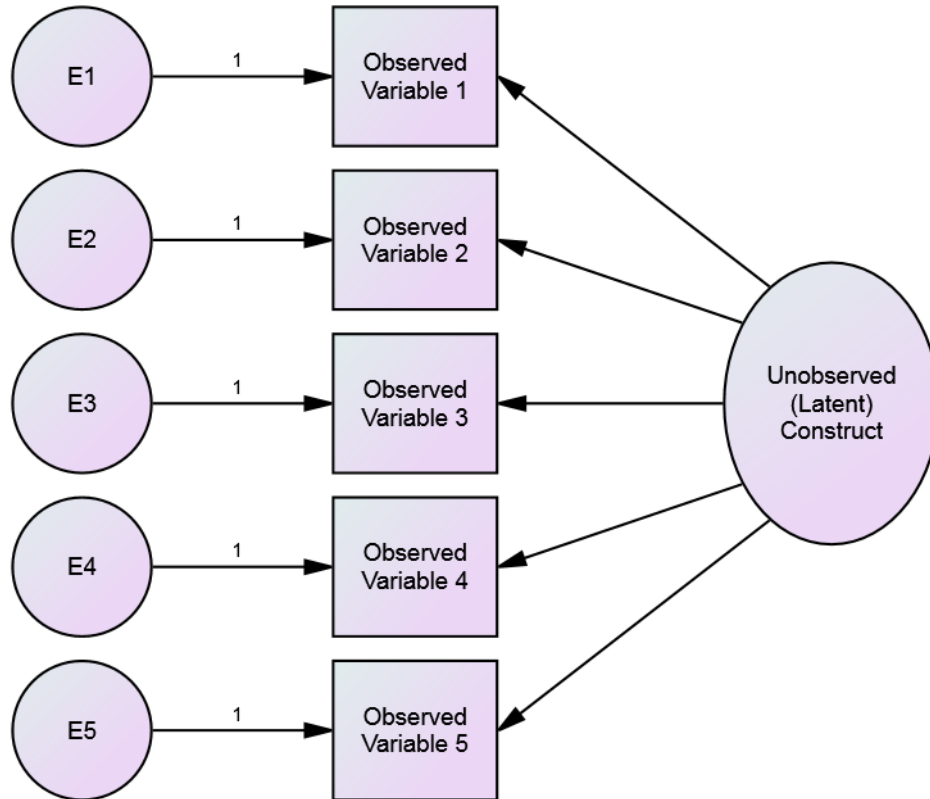


Figure 8. Illustration of a model of a psychological construct

I tested a two factor CDS model (with one factor reflecting affective support and one factor reflecting instrumental support) and a one factor model (simply, support). The models are presented in Figures 9 and 10.

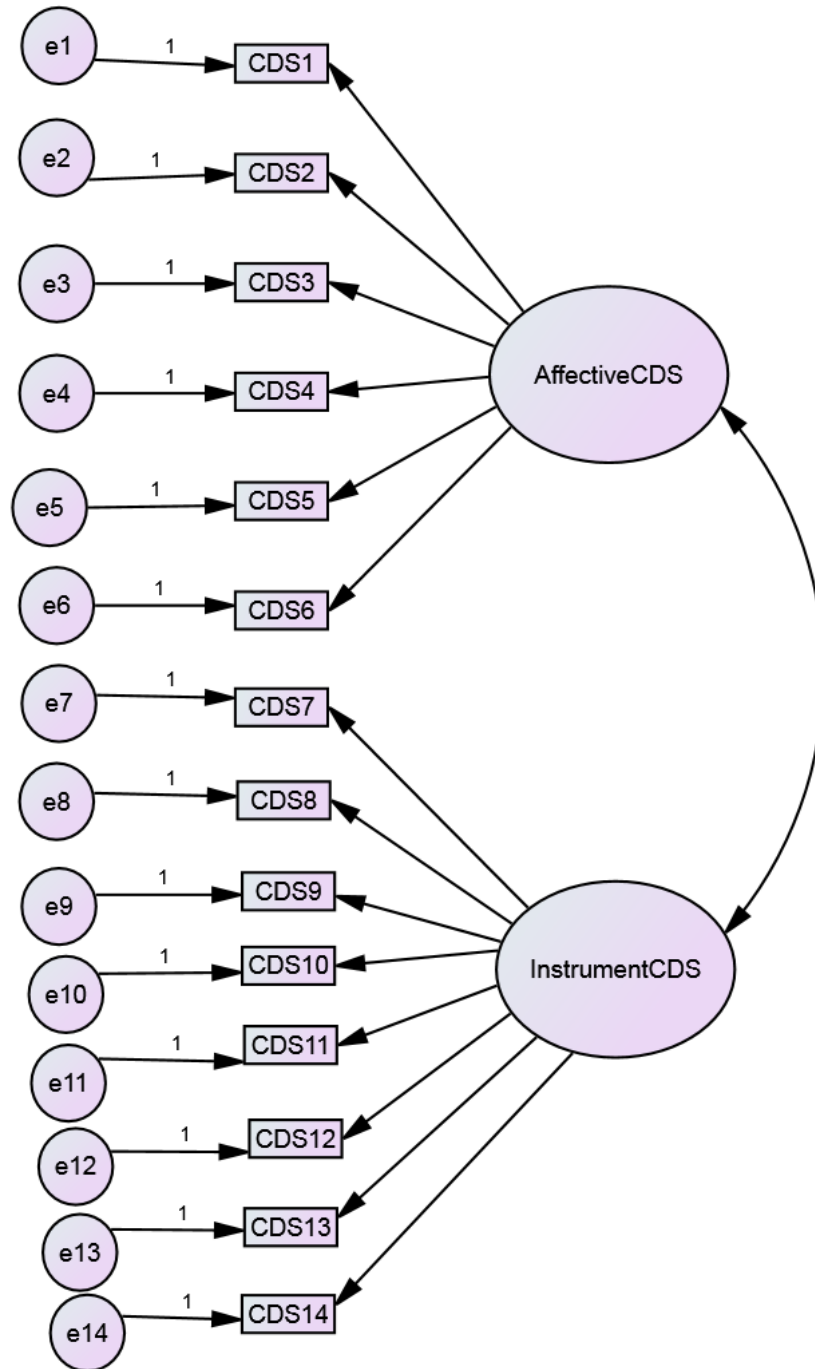


Figure 9. Hypothesized two-factor model

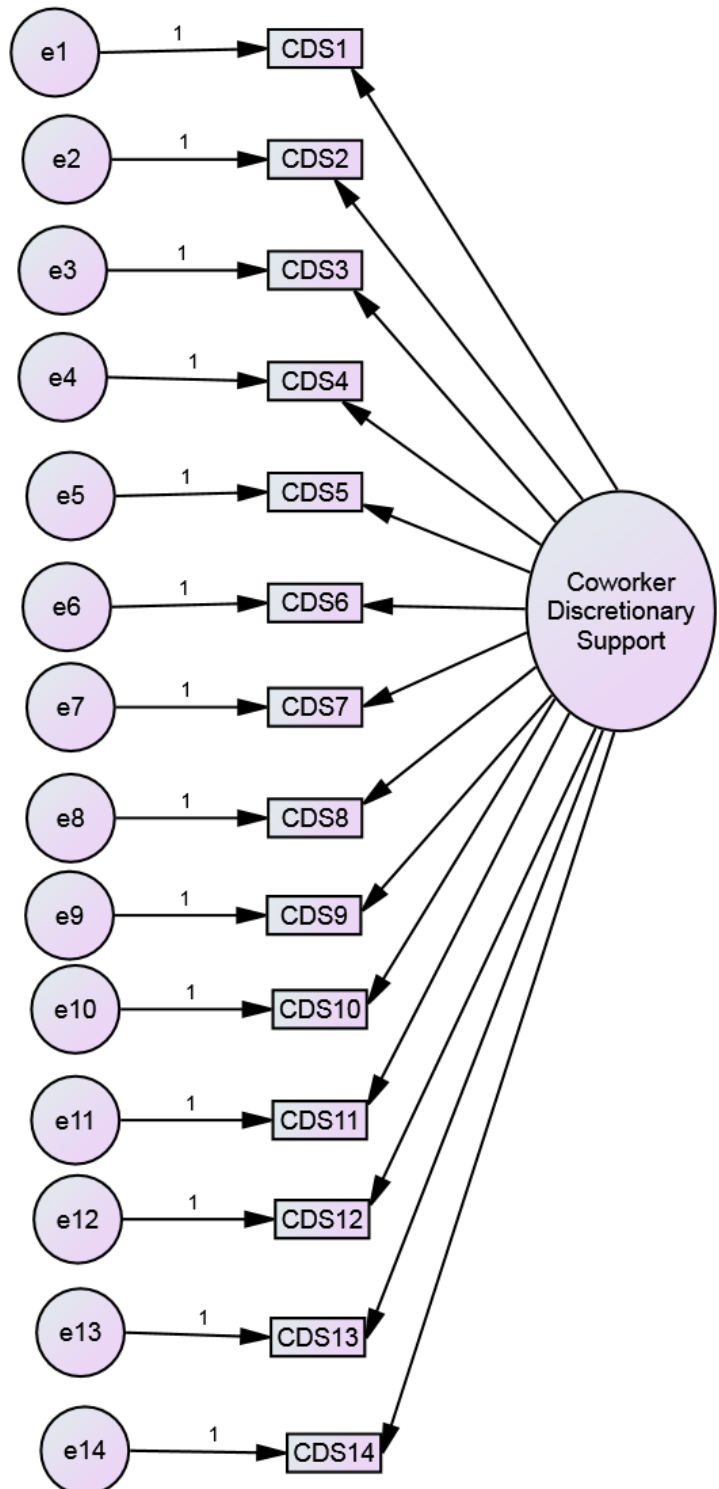


Figure 10. Hypothesized one-factor model

Factors loadings indicate the correlation between the CDS item and the factor (Beaumont, 2012). A factor loading can range from 0 to 1 and higher is better – generally

speaking, it should be above .50. Two items, CDS9 and CDS13 stood out as not loading particularly well on their associated factors. Recall that in the correlation matrix, they did not correlate as highly with the other items, suggesting that there are other constructs contributing to the item ratings that I did not account for in my model (recall the earlier discussion about measurement error). Results for each model are presented in Tables 7 and 8.

Table 7

Model 1: Initial factor loadings for a 14-item, 2-factor model

Variable	Factor Loading
<u>Affective CDS</u>	
CDS1	.752
CDS2	.795
CDS3	.826
CDS4	.803
CDS5	.780
CDS6	.840
<u>Instrumental CDS</u>	
CDS7	.794
CDS8	.768
CDS9	.501
CDS10	.760
CDS11	.737
CDS12	.813
CDS13	.452
CDS14	.699
Affective x Instrumental CDS	.875

Table 8

Model 2: Initial factor loadings for a 14-item, 1-factor model

Variable	Factor Loading
CDS1	.767
CDS2	.746
CDS3	.827
CDS4	.758
CDS5	.752
CDS6	.811
CDS7	.761
CDS8	.762
CDS9	.451
CDS10	.703
CDS11	.714
CDS12	.759
CDS13	.457
CDS14	.702

The results were fairly similar. Nearly all CDS items loaded well onto a single factor. Once again, items 9 and 13 had smaller factor loadings. From a statistical sense, it made sense to drop these items. Recall that I developed these items based on theory stemming from earlier qualitative research while assuming I would reduce the final set of items; therefore, I revisited the content of each item and its original purpose. On its surface, Item 9 reflects instrumental support, the work a coworker performs for an employee in their absence. Item 13 also reflects instrumental support, although the support is personal. These items may reflect an entirely different factor (or two). Coworkers may be required by the organization to “cover for” an absent employee. Personal favors may be more reflective of the “friend at work” construct that has been associated with engagement in past studies (Gallup, 2013). As I expected to have to trim

some items and for the purposes of cleaning up the model, I dropped these items and reran the analysis. Factor loadings are presented in Tables 9 and 10.

Table 9

Model 1: Factor loadings for a 12-item, 2-factor model

Variable	Factor Loading
<u>Affective CDS</u>	
CDS1	.754
CDS2	.794
CDS3	.829
CDS4	.801
CDS5	.779
CDS6	.839
<u>Instrumental CDS</u>	
CDS7	.795
CDS8	.778
CDS10	.752
CDS11	.735
CDS12	.817
CDS14	.690
Affective x Instrumental CDS	.877

Table 10

Model 2: Factor loadings for a 12-item, 1-factor model

Variable	Factor Loading
CDS1	.773
CDS2	.748
CDS3	.834
CDS4	.758
CDS5	.752
CDS6	.811
CDS7	.758
CDS8	.765
CDS10	.695
CDS11	.711
CDS12	.756
CDS14	.695

Again, each item loaded on each factor at a sufficiently high level. Statistical tests of how well the proposed model fit the data, however, did not yield clear results. Table 11 presents fit indices.

Table 11

Model fit indices for CFA analysis.

Model	χ^2	RMSEA	CFI	NFI
Two Factor Model 1	157.484 (53, N=133)**	.122	.906	.866
One Factor Model 2	196.595 (54, N = 133)**	.141	.872	.833

Absolute fit indices compare how well the theory fits the data. χ^2 and RMSEA are absolute fit indices. Comparative fit indices compare the model to a hypothesized model in which all variables are uncorrelated. CFI and NFI are comparative fit indices (Hooper, Coughlan, & Mullen, 2008).

*p < .00

The most commonly used model fit index is χ^2 . The ideal outcome for a χ^2 test is that it is statistically *insignificant*. In both models, it was significant at the p < .001 level. Although χ^2 is often criticized for being sensitive to sample sizes and difficult, the other model indices do not meet threshold criteria. For example, RMSEA should be less than .10, CFI is considered best over .95 (although > .90 is acceptable), and NFI should be over .90. The 2-factor model fared slightly better and factor loadings are slightly higher for most CDS items, but only negligibly.

Given the lack of conclusive indices of model fit, I relied on supporting information to determine how to proceed with finalizing the questionnaire. Recall that the parallel analysis showed that a second factor in my data sample was higher than a random data set, but did not have a sufficiently high Eigenvalue to be treat as a clear factor, while the one-factor model had a substantially higher Eigenvalue than the random data. The lack of discriminate validity between the two factors was another important finding. The

curved arrow between the two latent variables in the two-factor model (Figure 9) represents the covariance between the two factors. The estimated correlations in the 14-item and 12-item instruments (Tables 7 and 9) were approximately .88, each. Although it is typical to find some covariance among factors, we look for low correlations to strengthen the argument of separate factors. A correlation of .88 is extremely high.

In light of these findings, I concluded that it was most appropriate to proceed with a single factor model. Figure 11 illustrates the final CDS model. Using the statistical software, I imputed CDS scores for respondents for a 12-item CDS questionnaire. Scores ranged from 1.08 to 4.46 with a mean of 3.22 ($SD = .67$). Reliability as measured by alpha improved slightly with the 12-item, at .940.

Finally, I examined the correlation between the CDS score and responses to the two perceptual questions regarding coworkers, CDS15 (“I feel valued by my coworkers”) and CDS16 (“I trust my coworkers to support me in performing my job”). In fact, these items were highly correlated with the CDS score. CDS15 correlated with the CDS score .71 ($p < .001$) and CDS16 correlated .74 ($p < .001$).

Analysis of Relationship-Orientation

Half of the Northouse questionnaire items tap relationship-orientation. I chose to include the measure as an intact instrument to prevent unanticipated error variance, as it is typically administered as a cohesive unit, but for the purposes of this study, I only analyzed the relationship-orientation items². Reliability, as measured using Cronbach’s Alpha, was .807, sufficient for the recommended threshold of at least .70 (Bernardi,

² Another reason I did not compute a total, 10-item score is that some research suggests that task- and relationship-orientation is not a dichotomous construct; in fact, people may be high or low on both.

1994). Typically, the total score for relationship-orientation is calculated by summing the item

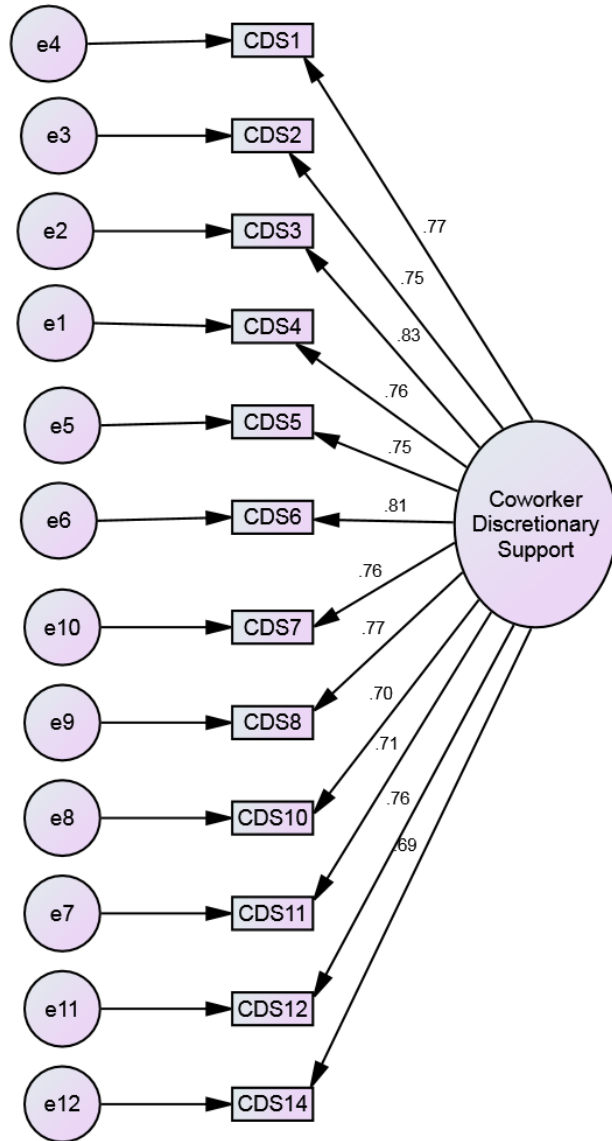


Figure 11. Confirmatory factor analysis model of a single latent factor of coworker discretionary support. Boxes indicate observed variables (i.e., CDS items), the oval represents the unobserved, assumed latest factor, and the circles represent error variance. The factor loadings indicate the correlations between the observed variables and the latent factor.

level ratings and transformed into a categorical variable (i.e., 20 - 25 is in the high range, 15 – 19 is high moderate, etc.). For my purpose, it made sense to maintain the original continuous nature of the data so, consistent with computing CDS and engagement scores, I calculated the mean rating across the five items. The highest possible score was 5 and scores ranged from 1.40 to 5.00 with a mean score of 3.64 ($SD = .65$). Table 12 presents the item descriptive statistics and the correlation matrix for relationship-orientation items.

Table 12

Correlation Matrix for Relationship-Orientation.

Variable ^a	M	SD	RO1	RO2	RO3	RO4	RO5
RO1. Try to make the work fun for others	3.50	.93	1				
RO2. Show concern for the personal well-being of others	4.04	.83	.376*	1			
RO3. Help group members get along	3.51	.89	.506*	.444*	1		
RO4. Listen to the special needs of each group member	3.57	.83	.480*	.607*	.482*	1	
RO5. Spend time exploring other peoples' ideas for the project	3.56	.83	.408*	.388*	.421*	.459*	1

^an=133 except for RO4 (n=132).

*p < .01;

Analysis of Work Engagement

Engagement scores are calculated by computing the mean rating across the nine engagement items. Scores can range from 1 to 7. Scores for this sample ranged from 1.44 to 7 with a mean score of 4.80 ($SD = .98$). Reliability as measured by alpha was .930.

Table 13 presents the item descriptive statistics and the correlation matrix.

Table 13

Correlation Matrix for Employee Engagement

<i>Variable^a</i>	<i>M</i>	<i>SD</i>	<i>EE1</i>	<i>EE2</i>	<i>EE3</i>	<i>EE4</i>	<i>EE5</i>	<i>EE6</i>	<i>EE7</i>	<i>EE8</i>	<i>EE9</i>
1. At my work, I feel bursting with energy	4.38	1.13	1								
2. At my job, I feel strong and vigorous	4.56	1.10	.838**	1							
3. I am enthusiastic about my job	4.88	1.26	.762**	.799**	1						
4. My job inspires me	4.55	1.36	.648**	.715**	.805**	1					
5. When I get up in the morning, I feel like going to work	4.42	1.50	.727**	.719**	.781**	.752**	1				
6. I feel happy when I am working intensely	5.12	1.13	.568**	.651**	.599**	.543**	.617**	1			
7. I am proud of the work that I do	5.50	1.22	.565**	.665**	.645**	.635**	.597**	.635**	1		
8. I am immersed in my work	5.15	1.10	.544**	.605**	.591**	.431**	.448**	.499**	.562**	1	
9. I get carried away when I'm working	4.66	1.15	.448**	.532**	.416**	.389**	.362**	.578**	.412**	.555**	1

^an=133

**p < .001 level.

Analysis of Relationship between CDS and Engagement

The next research question I explored was the relationship between CDS and engagement. For this study, I treated CDS as the independent (predictor) variable and engagement as a dependent (criterion) variable. To truly understand the direction of the relationship, I would need to collect data on CDS and engagement at different points in time (see the discussion section for more information on this point). Due to time constraints, I studied whether or not CDS is related to engagement without specifying causality. First, I generated a scatter plot of engagement and CDS scores, presented in Figure 12. The scatterplot provides a visual display of the relationship by plotting respondents' scores on both. Each point on the graph represents a respondent's CDS score (the value on the X axis) and engagement score (the value on the Y axis). Note that

the pattern indicates a positive, linear relationship between the two variables. That is, the higher a respondent's rating on one scale, the higher it tended to be on the other. I computed the correlation between the two variables, which was positive and significant at $r = .566$ ($p < .001$).

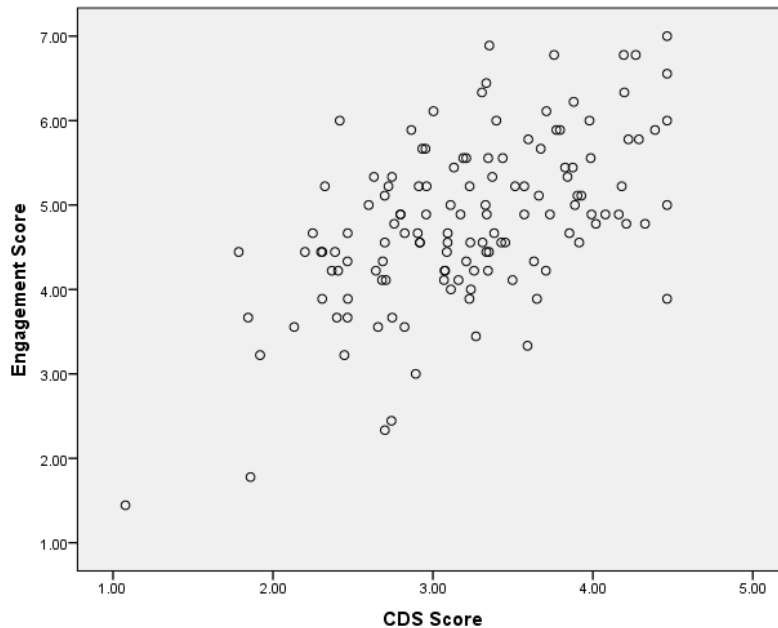


Figure 12. Scatterplot of CDS and Engagement scores

Finally, I performed regression to examine the relationship of CDS to engagement and the impact of relationship-orientation on the CDS-engagement relationship.

Regressing engagement on CDS alone results in a R value equal to the correlation (.566) and suggests that CDS accounts for a significant amount of variance in engagement, $R^2 = .32$, $F(1, 131) = 61.68$, $p < .001$. (An adjusted R^2 accounts for sampling error, high intercorrelations among predictors, etc. Unsurprisingly, given that this is a simple linear regression, the difference is negligible here, with the adjusted $R^2 = .315$.) The regression equation for CDS is $\hat{y} = 2.15 + .26x$ where \hat{y} = the predicted level of engagement and x = the level of CDS.

Note that, as described in the conceptual context (and in the discussion section of this paper), there are many other antecedents to engagement (organizational support, person-job fit, etc.). For the current purpose, we are only interested in what CDS and relationship-orientation can tell us about engagement.

To test whether or not relationship-orientation moderates the relationship between CDS and engagement, I performed a moderation test, following the steps below (Aiken & West, 1991):

1. Regressed engagement on CDS and relationship-orientation to determine if both are significantly related to engagement
2. Created a new variable, the interaction term (CDS * relationship-orientation)
3. Conducted a second regression analysis, entering CDS and relationship-orientation into the first block of the regression and the interaction term (CDS *RO) into the second block

Table 14 summarizes the descriptive statistics and regression results for each of the variables of interest. If the results of step 1, above, indicated that CDS and relationship-orientation did not predict a significant amount of variance in engagement, I would not proceed with the test for moderation. The results were significant, with $R^2 = .46$, $F(2, 130) = 55.87$ $p < .001$. (The adjusted $R^2 = .45$ is important in this case because there are two independent variables and they are correlated, with $r = .440$ ($p < .001$)). This indicates that both CDS and relationship-orientation are significantly related to engagement, as they increase, engagement increases, and together they account for 46% of the variance in engagement.

In step 2, I created the variable that represents the interaction of these two variables. In step 3, I reran the regression to determine if the interaction term between CDS and relationship-orientation was also significant. The final $R^2 = .46$ (adjusted $R^2 = .45$), $F(1, 129) = 37.17$ $p < .001$. However, the interaction term did not account for a significant change ($\Delta R^2 = .001$, $p = .563$).

Table 14

Descriptive and Regression Statistics for CDS, Relationship-Orientation, and Engagement

Variable	Mean	SD	Correlation with engagement	Unstandardized coefficient	Standardized coefficient	t
				B	β	
Engagement	4.80	.98				
CDS	3.22	.67	.566***	.556	.381	5.32***
Relationship-Orientation	3.64	.45	.588***	.634	.420	5.86***

*** $p < .001$; constant (y-intercept) = .709

The results indicate that while related to CDS and engagement, relationship-orientation does *not* moderate the relationship between CDS and engagement. Although further research would be needed to understand why, it may be that regardless of relationship-orientation, CDS is valued consistently across orientations, or that more relationship-oriented employees value different aspects of CDS than less relationship-oriented employees.

Chapter 5: Discussion

Findings and Implications

Researchers and practitioners alike say that social support is an important part of organizational culture, contributing to an environment of psychological well-being and employee engagement. In researching the existing literature on social support, I found evidence that social support on the whole is linked to these and other important outcomes of employee well-being and intrinsic motivation. However, I also noted that prior research defined social support inconsistently and measured it inadequately. Given these limitations, I questioned the underlying assumptions and findings, particularly about *coworker* support. I would like to believe that coworker support benefits employees in ways that are measurable and important to an organization, but before I could determine if coworker support was meaningful in these ways, I needed to reliably measure it. In order to do that, I wanted to know what it looked like in practice, in the organization. This question formed the basis of this study, which allowed me to define coworker support, measure it, and examine its relationship to employee engagement.

In exploring both the behavioral and conceptual meaning of coworker discretionary support (CDS) and its impact, I conducted a literature review and interviewed employees in the U.S. who interact with coworkers on a regular basis. Using the information I learned, I developed an instrument consisting of CDS behaviors and administered a survey, collecting information about frequency with which employees experience CDS, relationship-orientation style, and employee engagement. Using confirmatory factor analysis and regression techniques, I examined the underlying factor

structure of CDS, the relationship of CDS to engagement, and the impact of relationship orientation style on the CDS-engagement relationship.

Coworker support, as described to me by U.S. based employees with at least one year tenure in their current organizations, includes instrumental and affective support, such as the voluntary provision of resources, information, empathy, and encouragement, listening and feedback, and task-directed effort. Although instrumental support and affective support appear to be distinct in the extant literature, my interviews yielded some surprising findings. First, employees mostly provided me with examples of coworker support that were sounded instrumental, second, it was difficult to classify some examples of CDS because they encompassed both types of support and third, all support activities seemed to (a) contribute to employees' ability to get tasks done, either by relieving pressure or contributing to quality improvements and (b) be emotionally meaningful; that is, interviewees described *all* support as having positive, emotional impact, contributing to their ability to focus on the task at hand, and leading them to experience feelings of psychological well-being. These results suggested that CDS behaviors are not always distinctly different types, but a combination thereof.

The qualitative data provided additional, valuable information about CDS. For example, in my conceptual context, I suggested that reciprocity would be an important feature of a supportive work environment. My interviewees did, in fact, convey intention to reciprocate in the face of, and because of feelings of appreciation, obligation, and/or guilt.

The data analysis results supported my emerging impression of CDS as a meaningful, single factor. Although model fit indices were inconclusive for the one-

factor or the two-factor model, the CDS instrument demonstrated excellent internal consistency, supporting its use as a measure of a single construct – extra-role support behavior that coworkers provide each other. Most importantly, this study supported the underlying assumption about the benefits of coworker support, demonstrating a significant, positive relationship with work engagement. That is, showing that as one variable increases, so does the other.

One of the more surprising results of this study was the finding that relationship-orientation does not moderate the relationship between CDS and engagement. I hypothesized that the correlation between CDS and engagement would be higher among people who are more relationship-oriented; however, my data did not find a moderating effect. During Phase I, some interviewees did not distinguish between coworkers who provided support and “friends at work” (another important concept in engagement research (Gallup, 2013)). At the same time, some interviewees felt that “friends at work” was irrelevant to CDS and that CDS’ main value is that it contributes to “getting the job done”. These contrasting findings may suggest an explanation for the lack of a moderating effect of relationship-orientation.

What do these findings mean for leaders? First, leaders need to pay attention to their employees’ behavior toward one another. This study supports the premise that CDS is a significant feature of an engaged workforce. In fact, for some employees, it is a requirement in the job. What this means is that leaders need to pay attention to the level of support coworkers routinely offer each other outside of role requirements. Given the research on organizational citizenship behaviors, engagement, and CDS, it is feasible that an increase in any one of these things leads to an increase in the others.

Although the purpose of this study was to explore the assumptions around coworker social support, it illustrates the importance of leadership creating a supportive work environment. And, while this study did not explore *what* leaders should do, that becomes the logical next question. Many leadership models already address social support and it is worth briefly addressing in this paper. It is important to note, however, that promoting a supportive work environment is not a substitute for good management, good leadership, and the provision of relevant job resources. However, in the face of an engagement problem or coworker incivility, leaders would do well to model and promote CDS.

Kouzes and Posner (2012) describe actions to which excellent leaders should commit, two of which stand out as related to social support: Foster Collaboration and Celebrate Values and Victories. In their discussion of Foster Collaboration, Kouzes and Posner touch on ways to promote collaboration and cooperation among coworkers, particularly those working together on teams. For example, they encourage leaders to get people interacting and recognize and reward support to “create norms of reciprocity” (p. 243). Kouzes and Posner specifically discuss the value of social support for promoting engagement, psychological well-being, and even physical well-being in their discussion of promoting a “Spirit of Community” (pp. 316-317). Finally and perhaps most importantly, for it underlies all of Kouzes and Posner recommendations to leaders, they recommend Modeling the Way. Leaders who want to promote a behavior need to be the first to engage in the behavior. I would encourage leaders to examine the CDS behaviors documented in this study and think about how to practice, encourage, and reward them.

Limitations

There are many threats to validity in a study, such as researcher bias and measurement error (Maxwell, 2013). While these threats could not be eliminated, I sought to minimize them through careful research design and attention to personal biases. The purpose of this section is to describe potential threats and ways in which I designed and carried out my research to reduce them as well as to acknowledge its limitations.

The first set of limitations I describe relate to the qualitative phase of the research. My experience with coworker support comes from working full-time with other people for the last 24 years. As someone who is people-oriented, I favor a collaborative, collegial working environment. I recognize that my personal experience with coworker support is that it is a good thing and related to my engagement with my job and my organization. This could have easily influenced how I phrased questions during interviews, my tone of voice, and the way in which I interpreted interviewees' responses. Furthermore, a qualitative research method such as interviews is limited in its generalizability because of small sample sizes.

Given these limitations, I used the following methods recommended by Maxwell (2013), Stevens (1986), and Murphy and Myers (2004) to minimize the impact my own bias has and to increase the objectivity of the study:

- ***Applied a mixed methodology:*** While qualitative research with small sample sizes limits generalizability, quantitative analysis does not provide the richness of data that one-on-one conversations can provide. I used both approaches to capitalize on depth and breadth of information. Furthermore, I collected data from employees working in a variety of organizations and occupations, to “reduce the

risk of chance association and of systematic biases” (Maxwell, 2013, p. 128) and increase the generalizability of my inferences.

- ***Advice, oversight, and collaboration:*** I worked with my advisor, peers, and other organizational consultants to ensure that my interview protocol was carefully worded to reduce priming or prompting interviewees to answer in a certain way. I also pilot tested the interviews, practicing with organizational psychologists.
- ***Sought disconfirming information:*** During interviews, I asked probing questions about why interviewees answered the way they did and attempted to create a safe environment for contrasting responses. For example, when asking to what extent coworker support examples were meaningful, I acknowledged that sometimes they may not be and they do not have to be.

The quantitative phase, or survey methodology presented additional limitations. One limitation is that I missed some important or compelling research about coworker support and not fully represented the domain. Another threat – one I criticized in other studies, was that I may not have worded my CDS items to maximize consistent interpretation across different respondents. Related to respondents, another limitation is that the survey relied on self-report. Just as I have biases, people respond to questions and make ratings based on their own interpretations and experiences of the world. Answering questions about work engagement first may influence or prime respondents to think in a certain way when responding to questions about CDS, or vice versa. Impression management can also influence responses. For example, on the engagement section, respondents may believe that it is better to be more engaged in the job or organization, and inflate their ratings.

Another limitation to the survey methodology was that, because I collected information from subjects at a single point in time, I cannot infer causation between CDS and engagement. Although conceptually it makes sense that incidents of CDS contribute to engagement, this study did not provide empirical evidence of the directionality. My conceptual context suggests that CDS serves as an intrinsic motivator and a job resource, supporting psychological well-being, success at meeting job demands, and enabling engagement. Alternatively, it is possible that people who are highly engaged unconsciously invite support from coworkers who are attracted to the energy of their engaged colleagues. For these reasons, I am careful to describe my analysis as examining the relationship between CDS and engagement, rather than assuming CDS was an antecedent to engagement.

Sampling error is another potential limitation of the study. My hope is that my findings generalize to U.S.-based employees who routinely spend time with coworkers. The smaller the sample, the less generalizable results are to a large population. Given the time constraints and lack of formal relationships with a large set of organizations or even a small number of large, U.S. based employers, it was difficult to coordinate a large sample size. The current sample may not fully reflect the population and, as a result, may have inflated the actual relationship between CDS and engagement (Type I error) or underestimated it (Type II error). According to Stevens (1986) and Murphy and Myers (2004), factor analysis requires five to ten respondents per item and a minimum of 100 to draw meaningful inferences. With an $N = 133$, I achieved that minimum for the CDS

questionnaire; however, relative to the length of the full survey (35 ratings items, 30 of which were included in the regression analyses³), its generalizability is limited.

To reduce the impact of the limitations of the quantitative phase of this study, I took the following precautions:

- ***Item Development:*** To increase the validity of the items and the objectivity of ratings, I developed each item based on clearly delineated and behavioral examples of coworker support.
- ***Statistical Analysis:*** I used available analytical techniques to eliminate some items and make my instrument more parsimonious. Every step I took in cleaning data and eliminating or retaining information was based on a theoretical and analytical rationale. Furthermore, because of my inexperience with the sophisticated statistical techniques I used in this study, I had a Ph.D. level statistician perform the same analysis I did and compared the results to ensure accuracy.
- ***Sequencing Items:*** Although I could not randomly administer items and the survey wasn't lengthy enough to create maximum separation between CDS and engagement, I placed the Northouse Leadership Styles Questionnaire in between the CDS and engagement questionnaires. My hope was that it at least mildly distracted respondents from CDS experience. Recall that the Northouse Questionnaire also included task oriented items that did not address relationship type topics.

³ Recall that I did not include the five task-oriented items in the analysis

There are other threats to validity that I did not control for. For example, in my conceptual context, I touched on many variables that serve as job resources and influencers of psychological well-being, such as leadership characteristics, supervisor support, job characteristics, and personality. I included a measure of relationship-orientation to account for one potential interaction with CDS, but I excluded those and other variables that researchers know are related to engagement and that may interact with the CDS – engagement relationship.

Future Directions

Based on a mixed-method approach to research, I developed a reliable instrument that measures the domain of CDS behaviors. That said, more data is always better, and future researchers could find ways to improve the instrument and further examine the factor structure of CDS. For example, the literature described support as instrumental or affective. I found that most interviewees discussed instrumental support but, regardless of “type” of CDS, it resonated emotionally with the recipients. Perhaps the factors discussed in the literature could be better sorted based less on the “type” of support and more on the “anticipated outcome” of support, such as “freeing up time”, “reducing emotional strain”, “improving a product or process”. Or it may be that CDS is primarily important as a voluntary response to specific events and has the effect of creating a state of enhanced psychological well-being and facilitating the successful performance of a task.

A series of data collections to support exploratory analysis and model testing on large sample sizes could yield more robust results. For example, Matsunaga (2010) recommends collecting sufficient data at three intervals based on the following:

- Data collection 1: Principle component analysis to trim items to the most parsimonious set of items that account for the most variance
- Data collection 2: Exploratory factor analysis to identify a reasonable factor structure and specify a model
- Data collection 3: Confirmatory factor analysis to assess the final model fit

Now that there is a reliable, behaviorally based measure of CDS, it would be interesting to examine the relationship between CDS and other variables. For example, one could collect information on other personality factors that might impact the relationship between CDS and engagement. For example, based on the interviewees' responses, CDS appears to be an intrinsic motivator to some and a maintenance factor to others. In other words, when it matters, it really matters, and when it doesn't matter, it does no harm. While some people experience guilt at receiving so much help, they manage that by reciprocating.

Another viable outcome of CDS may be organizational engagement. The focus of this study was work engagement (i.e., engagement targeted toward one's job as opposed to one's employer), because the conceptual context considered CDS as a job resource. As a function of the organizational environment, it might be reasonable to expect CDS to relate to engagement targeted toward the organization. Researchers who study organizational engagement find a link between it and social support (Gallup, 2013; Kittredge, 2010; Saks, 2006).

Another area of research is around personality factors that determine whether CDS is a motivator or a hygiene factor. In this study, all recipients valued CDS, but whether it was a necessary part of work was a matter of individual differences. Not

everyone thinks of it as something one must have. Some individuals do not miss it if it's gone unless there is a job hindrance that it can ameliorate. Others must have it and it is a critical preference in a job (intrinsic motivator). Given the small sample size, these findings are highly suggestive, but not definitive. Research in this area could contribute to recruitment policies as well as employee engagement.

The unstated assumption in this study is that if CDS relates to engagement, and engagement relates to positive business outcomes such as productivity, employee retention, and customer service, then CDS indirectly relates to these positive outcomes. It would be beneficial to examine the direct relationship between CDS and positive business outcomes, or explicitly examine the CDS to engagement to positive business outcomes.

Finally, this study is a springboard for what leaders need to do to promote CDS in their organization. This study examines what CDS looks like and how it is beneficial. The next step could be to determine what behaviors and interventions would launch or increase CDS in the workplace.

In addition to suggestions of future directions that are research-based, there is practical potential as well. As described earlier in the discussion section, the result of this study is a reliable measure of CDS. From the perspective of organizational leaders, it could be important know if CDS is a scarce job resource. If a leader is concerned about coworker support and engagement in general, it would be beneficial to measure the extent to which CDS is occurring in the organization and if an intervention is necessary. This instrument would be a tool for making that assessment.

Chapter 6: Conclusion

Although there is extensive research on employee engagement, there was limited research on coworker support, either defining it consistently or examining the underlying processes by which it could be related to engagement. Drawing on conceptual and empirical literature on engagement, job resource-demands, and psychological well-being, and through interviews and an online survey, I developed a theoretical basis for how and why CDS influences employees and serves as a job resource. Through a series of interviews, I identified types of CDS and explored how employees interpret it, value it, and respond in the workplace. Based on this research, I developed a reliable measure of CDS and demonstrated that it has a positive relationship to work engagement, regardless of the relationship-orientation of the recipient.

The results of this study support CDS as a job resource and its significant relationship with engagement. As such, an organization should consider encouraging and rewarding employees who support their coworkers, particularly in jobs that are high in hindrance-type demands. The study did not support the specified two-factor model and future research is recommended to determine if CDS can be measured more efficiently and better understand the underlying factor structure. However, the instrument is highly reliable and can be used for future research on job resources-demand theory and employee engagement, and for organizational development.

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Appendix A. Recruitment Material

Research Study on Coworker Support and Employee Engagement

You are invited to participate in a research study about coworker voluntary support and its relationship to employee engagement. Maggie Collins, who is completing a master's degree in organizational leadership at St. Catherine University (St. Paul Minnesota), is conducting this research as part of her thesis.

The Purpose of this research study is to examine how much voluntary support employees receive from their coworkers and if it relates to employee engagement.

Risks: There is no more than minimal risk associated with participating in this study. Thinking about and answering questions regarding interactions with one's coworkers and one's feelings about work in general can be positive or distressing to some participants.

Benefits to Participants: You will not benefit from participating in this study. However, we hope the information learned from this study may benefit society in our better understanding of interpersonal relationships in organizational contexts.

Requirement for Participants: Participants should be:

- *At least 21 years of age and employed in the U.S.*
- *At their current job for at least one year*
- *Regularly interact with coworkers – people who do not supervise or report directly to them*

[For Interviews]

The interview will take 30 to 45 minutes. If you are interested in participating in an interview, please contact the researcher at mmcollins@stkate.edu or 651-261-3704.

[For Surveys]

If these three characteristics are true of you, please consider completing this survey

The survey will take approximately 20 minutes to complete. If you are interested in participating, please click the link below:

<URL>

This study is being conducted through St. Catherine University. Please contact the researcher at mmcollins@stkate.edu or the researcher's thesis advisor, Rebecca Hawthorne, at rkhawthorne@stkate.edu for more information

Appendix B. Interview Protocol

Research Study on Coworker Voluntary Support and Employee Engagement.

You are invited to participate in a research study. Please take your time to read this information below and contact the researcher if you have any questions pertaining to the information below.

Purpose: This study is being conducted to understand how employees experience coworker voluntary support and if that support has a relationship to employee engagement.

Procedures: As a participant, you will be asked to describe experiences of when coworkers voluntarily provided you support when you were facing challenging situations and if that support was meaningful. You will also be asked about your work industry and tenure in your current job. The anticipated time for the interview is one hour. The interview may take place in a private space in a public location such as a study room at St. Kate's, the researcher's downtown office, or similar type location convenient to the interviewee.

Risks to participation: There is no more than minimal risk associated with participating in this study. Thinking about questions regarding supportive behavior or lack thereof from one's coworkers can be positive or distressing to some participants.

Benefits to Participants: You will not benefit directly from participating in this study. However, you are entitled to a copy of the executive summary when the study is completed.

Voluntary Nature of Participation: Participation in this study is voluntary. Your decision to participate or decision to withdraw from participation at any time during the interview will not result in any penalty or adverse consequences.

Confidentiality: Responses will be confidential. Your confidentiality will be protected, and any identifying information will be stored temporarily and deleted by the researcher within six weeks of the interview. The researcher, the researcher's thesis advisor, and a statistical consultant will review the researcher's collected data without identifying information included. Data from this research will be used solely for the purpose of this study and any publications that may result from this study.

Questions/Concerns: Should you have any questions about confidentiality, the research, or results (e.g., an executive summary), please contact the researcher at mmcollins@stkate.edu, the researcher's thesis advisor, Rebecca Hawthorne, at rkhawthorne@stkate.edu, or the St. Kate's IRB Chair, John Schmitt, at jsschmitt@stkate.edu.

Statement of Consent:

You are making a decision whether or not to participate. Your signature indicates that you have read this information and your questions have been answered. Even after signing this form, please know that you may withdraw from the study at any time during the interview without penalty or adverse consequences. A copy of this consent form is being provided to you.

Signature

Date:

Describe the purpose of the interview and my objectives

Walk through the consent form. Ask subject if they understand: Purpose; risks; benefits; confidentiality; ability to stop the interview at any time.

Questions

1. Do you work in the U.S.?

2. How long have you worked for your current organization? (*Round it to years*)

3. Tell me a little about your work setting? (*e.g., Do you share offices? Work in an open floor plan? About how many colleagues or coworkers do you come into contact with on a regular day?*)

4. Think about a situation where you received help from a coworker – something they didn't have to do but offered.
 - 4a. What was the situation (*e.g., what was the challenge?*) (*E.g., performing a task; meeting a deadline; where to go to get information or materials you needed; handling or avoiding a conflict with someone else, or motivating yourself to do a task that you were unsure of.*)

What did your coworker do to support you? (*If help is described as “helpful” “supportive” “took my side” Can you describe the specific behaviors that...*)

What was the outcome of their support?

4b. What was the coworker's relationship to you in terms of the workplace? (e.g., on your work team; from a different department? Shouldn't be a direct report or manager.)?

4c. Did you ask for help or was it just offered? (Did that make a difference? If you asked for help, did it make you ask for help in the future or did you never ask for help again?)

4d. How did you feel about it?

*How did their support affect you? (For example, did it contribute to your success?)
If you don't feel like it mattered, that's okay too.)*

Was there any long-term impact? (e.g., did you help them in the future; did it make your work-life better? Other positive impact?)

4e. In general, what are your views toward coworker support – that is, is it something that is important to you when you think about how you feel about your job? Or does it matter? (For example, some people may prefer, when they have more personal challenges, to keep them separate from the workplace.)

Are there other example that comes to mind? How does this influence you on helping your coworkers?

Thank Participant for their time. Remind them that they may request an executive summary if they're interested in the results.

Appendix C. Survey Content

Informed Consent

Research Study on Coworker Voluntary Support and Employee Engagement

You are invited to participate in a research study. Please take your time to read this information below and contact the researcher if you have any questions pertaining to the survey.

Purpose: This study is being conducted to understand how employees experience coworker voluntary support and if that support has a relationship to employee engagement.

Procedures: As a participant you will be asked to rate a series of questions related to your experience with coworker support, work engagement, and work orientation. You will be asked about your work industry and tenure in your current job. This survey will take 15 to 20 minutes.

Risks to participation: There is no more than minimal risk associated with participating in this study. Thinking about and answering questions regarding support or lack thereof from one's coworkers and one's feelings about work in general can be positive or distressing to some participants.

Benefits to Participants: You will not benefit directly from participating in this study. However, you are entitled to a copy of the executive summary when the study is completed.

Voluntary Nature of Participation: Participation in this study is voluntary. Your decision to participate or decision to withdraw from participation at any time before submitting your responses will not result in any penalty or adverse consequences.

Confidentiality: Responses will be anonymous. The survey platform may collect IPS address, which will be removed from the response data and deleted. The researcher, the researcher's thesis advisor, and a statistical consultant will review the researcher's collected data without IPS information included. Data from this research will be used solely for the purpose of this study and any publications that may result from this study.

Questions/Concerns: Should you have any questions about confidentiality, the research, or results (e.g., an executive summary), please contact the researcher at mmcollins@stkate.edu, the researcher's thesis advisor, Rebecca Hawthorne, at rkhawthorne@stkate.edu, or the St. Kate's IRB Chair, John Schmitt, at jsschmitt@stkate.edu.

Statement of Consent:

You are making a decision whether or not to participate. By clicking the submit button below, you are confirming that you read this information and your questions have been answered. Even after beginning the survey, you may withdraw from the study at any time before submitting your responses will not result in any penalty or adverse consequences. If you would like a copy of this consent form, please print this page out before clicking on the *submit* button below.

<Submit>

Survey Content

Background Questionnaire:

Do you work in the United States?

Yes or no response. If yes, continue. If no, thank them but give message that they are not eligible for this survey sample.

How long have you worked in your current organization?

[Response logic: If one year or more, continue. If less than one year, thank them but give message that they are not eligible for this survey sample.]

Do you work in an organization with multiple coworkers (people that do not report to you or supervisor you)?

Yes or no response. If yes, continue. If no, thank them but give message that they are not eligible for this survey sample.

Ratings Questionnaire

CDS Questionnaire

1. I have coworkers who offer to help me without being asked.
2. I have coworkers who listen to me and show me sympathy when I am upset.
3. I have coworkers who take time out from their work to help me.
4. I have coworkers who acknowledge my personal (non-work) accomplishments or milestones.
5. I have coworkers who congratulate me on my professional work accomplishments.
6. I have coworkers who actively encourage me when I am struggling to do my best.
7. I have coworkers who help me when I have to meet an urgent deadline or my workload is heavy.
8. I have coworkers who voluntarily help me accomplish challenging or unusual work tasks.
9. I have coworkers who perform my work when I have to be absent.

10. I have coworkers who provide me with practical advice related to getting my work done.
11. I have coworkers who share information, supplies, and other resources to help me perform my work.
12. I have coworkers who provide me with advice and guidance to develop my skills and progress in my career.
13. I have coworkers who perform personal (non-work) favors for me.
14. I have coworkers that advocate for me to others in the organization.
15. I feel valued by my coworkers.
16. I trust my coworkers to support me in performing my job.

Northouse Styles Questionnaire - Task-Relationship Orientation Scale

For each item below, indicate on the scale the extent to which you engage in the described behavior. Move through the items quickly. Do not try to categorize yourself in one area or another.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. Make a “to do” list of the things that need to be done.
2. Try to make the work fun for others.
3. Urge others to concentrate on the work at hand.
4. Show concern for the personal well-being of others.
5. Set timelines for when the job needs to be done.
6. Help group members get along.
7. Keep a checklist of what has been accomplished.
8. Listen to the special needs of each group member.
9. Stress to others the rules and requirements for the project.

Work & Well-being Survey – Short Version (UWES -9)©

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the “0” (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

1	2	3	4	5	6
Almost Never	Rarely	Sometimes	Often	Very Often	Always

1. _____ At my work, I feel bursting with energy
2. _____ At my job, I feel strong and vigorous
3. _____ I am enthusiastic about my job
4. _____ My job inspires me
5. _____ When I get up in the morning, I feel like going to work
6. _____ I feel happy when I am working intensely
7. _____ I am proud of the work that I do
8. _____ I am immersed in my work
9. _____ I get carried away when I'm working

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Optional Background Questionnaire Page

Thank you for taking the time to complete this survey.

This page includes optional questions about the type of work you do. Please consider responding these questions so that we may understand how diverse the organizations and occupations are of survey respondents. In the final report, I will only provide aggregate information, that is, the percent of responses to each question. This section has no impact on our ability to use the responses you provided to the rating questions.

1. What type of organization do you work for?
 - Private or public for profit corporation
 - Non-profit organization
 - Education
 - Government, civilian
 - Military

2. Which industry do you work in?
 - Accommodation and food services
 - Administrative and support services
 - Agriculture, forestry, fishing, and hunting
 - Arts, entertainment, and recreation
 - Construction
 - Educational services
 - Financial Services
 - Healthcare and social assistance
 - Information Technology
 - Law, public safety, corrections, and security
 - Management of companies and enterprises

- Manufacturing
- Protective services
- Public administration
- Real Estate, rental, and leasing
- Wholesale and retail trade
- Transportation and utilities
- Other

3. Select the occupation below that most closely matches your job:

- Architecture and Engineering
- Arts, Design, Entertainment, Sports, and Media
- Building and Grounds Cleaning and Maintenance
- Business and Financial Operations
- Community and Social Service
- Computer and Mathematical
- Construction and Extraction
- Education, Training, and Library
- Farming, Fishing, and Forestry
- Food Preparation and Serving Related
- Healthcare Practitioners and Technical
- Healthcare Support
- Installation, Maintenance, and Repair
- Legal
- Life, Physical, and Social Science
- Management
- Military Specific
- Office and Administrative Support
- Personal Care and Service
- Production
- Protective Service
- Sales and Related
- Transportation and Material Moving

Completion Page

Thank you for taking the time to complete this survey.

If you have any questions, you may contact the researcher at mmcollins@stkate.edu, or the researcher's thesis advisor, Rebecca Hawthorne, at rkhawthorne@stkate.edu, or the St. Kate's IRB Chair, John Schmitt, at jsschmitt@stkate.edu.

Appendix D. Permission to Use Proprietary Northouse Styles Questionnaire



Margaret Collins <mmcollins@stkate.edu>

Permission to use Northouse Task and Relationship Questionnaire

permissions (US) <permissions@sagepub.com>
To: Margaret Collins <mmcollins@stkate.edu>

Tue, Dec 3, 2013 at 3:05 PM

Dear Margaret,

Thank you for your request. You can consider this email as permission to reprint the material as detailed below in your upcoming thesis. Please note that this permission does not cover any 3rd party material that may be found within the work. We do ask that you properly credit the original source, SAGE Publications. Please contact us for any further usage of the material.

Best regards,

Michelle Binur

From: Margaret Collins [mailto:mmcollins@stkate.edu]
Sent: Tuesday, December 03, 2013 11:55 AM
To: permissions (US)
Subject: Permission to use Northouse Task and Relationship Questionnaire

[Quoted text hidden]