QUANTIFYING AND QUALIFYING THE LINKS THAT BIND

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ABSTRACT

Employees' links to organizations and coworkers represent an important factor related to many work-related constructs in the Industrial-Organizational (I-O) Psychology literature. Often, I-O researchers conceptualize these employee links through either the number of workplace links or an employee's perceived social support. However, these conceptualizations are potentially limited. Research into Social Network Analysis has investigated different quality dimensions in links (e.g., link strength and valence) which can significantly influence outcomes in social, workplace, and general well-being contexts. Thus, the present thesis project was undertaken to explore whether incorporating these quality dimensions of link strength and link valence adds any incremental utility to our understanding of workplace constructs. Bivariate and partial correlation analyses were used to test hypotheses. Results indicated partial support for both link strength and link valence as new constructs for measuring links.

DEDICATION

This work is dedicated to my friends within the I-O program here at UTC, my family, as well as the professors at UTC who helped me along the way. This work never would have been possible without all your support.

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LIST OF ABBREVIATIONS

AJIG, Abridged job in general

I-O, Industrial-Organizational

JD-R, Job-demands resources

KUT, Klein et al. unidimensional target-free

LIST OF SYMBOLS

α, Cronbach's alpha coefficient representing reliability

β, Beta coefficient representing standardized estimates of variance in regression analysis

Δ, Difference or change in a quantity

F, ANOVA test statistic

p, Probability

r, Estimate of Pearson product-moment correlation coefficient

R^2, Proportion of variance accounted for, multiple regression procedure

CHAPTER 1

INTRODUCTION

Relationships, connections, and links (collectively referred to as "links" throughout this manuscript) are central to the human experience. We all are connected through links to friends, family, pets, and even organizations (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). These various links differ both in terms of their strength (i.e., frequency of interactions and overall importance) and valence (i.e., positive or negative nature of a link), and we know, intuitively, that these differences often influence how we go about our day-to-day lives (e.g., who we interact with, where we work, and even how we go about completing tasks; Granovetter, 1983; Nelson, 1989). Thus, collectively, our links with other people and institutions represent our interconnectivity within a community. This is true not only in our personal lives, but also in our professional lives at work. Industrial and Organizational (I-O) Psychologists have long treated links as an important factor related to many work-related constructs including job attitudes (e.g., satisfaction, commitment, engagement) and perceptions of fit with one's job and organization. However, despite research from other fields (e.g., social network analysis) indicating how differences between the strength and valence of an employee's links can influence workplace outcomes (e.g., performance, communication), much of current I-O theory only conceptualizes links through either the number of links held or perceived social support, disregarding consideration for differences in link strength and valence.

For example, in their theory of job-embeddedness, Mitchell et al. (2001) explored voluntary turnover by examining why people stay in an organization. Mitchell et al. identified three sets of factors along which a person's job-embeddedness is likely a function of: (1) *links* (i.e., the number of connections to people, activities, or the organization), (2) *fit* (i.e., the degree of alignment in values and beliefs between an organization and an employee), and (3) *sacrifice* (i.e., the cost of losing links and their accompanying benefits). Thus, from a job-embeddedness perspective, links are seen as one of the core contributing factors, but only in a limited and very quantitative way (e.g., in terms of number of coworkers, friends, family).

Missing from this conceptualization is any consideration of the qualities of such links (i.e., their strength and valence). Thus, a link between two coworkers who interact frequently every day is not differentiated from a link between two coworkers who interact briefly once a month. It is important to note, however, recent research into job-embeddedness has begun to expand its theoretical base to consider the negative impact of job-embeddedness (Lee, Burch, & Mitchell, 2014). Most recently, Allen, Peltokorpi, and Rubenstein (2016) explored the moderating effects of job-embeddedness in adverse work-environments, specifically employees stuck working under abusive supervisors. While Allen et al. focused explicitly on the negative impact resulting from highly embedded employees stuck in adverse environments (e.g., increased emotional exhaustion and decreased sleep quantity/quality), results from their study also illustrated one way that negative links can influence an established theory.

Research leveraging the Job-Demands Resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) provides another example of how our conceptualization of links is often incomplete. Within this framework, employee burnout and engagement are explained as functions of the demands faced by employees and the available resources employees have to

meet demands (Schaufeli & Bakker, 2004). From a JD-R perspective, links are considered a primary source of resources, but typically in terms of a person's perceived social support (Halbesleben, 2006; Johnson & Hall, 1988). While I-O researchers often view social support through the lens of an individual's perceived support, Pierce, Sarason, and Sarason (1991) found that the actual support received from specific relationships also played a distinct and significant role in personal adjustment (e.g., coping with loneliness).

Thus, specific individual relationships also provided unique and significant influence alongside the general perception of available support links. Furthermore, it is important to note that the absence of social supports does not necessarily imply the presence of a negative link. Therefore, by only examining an employee's available social support, no consideration is given towards the impact of potentially negative workplace links.

Focusing solely on a person's number of links at work, or available social support, has become common in many popular theories and models. That is, much of past research has focused on the quantity of links, rather than their quality. While some researchers have suggested investigating the context behind an employee's links (Zhang, Fried, & Griffeth, 2012), to-date no published study has thoroughly examined the utility of a link's strength or valence in relation to constructs in I-O Psychology. Therefore, the present thesis project was designed to investigate whether identifying and measuring the strength and valence of an employee's links to the workplace adds incremental utility over solely considering the number of links and available social support.

Understanding the Impact of Link Strength and Valence

As already noted, links can be characterized not only in terms of quantity, but also in terms of qualities such as strength and general positive/negative valence. These quality dimensions are typically absent from research into links within the I-O community, leaving I-O professionals without an effective terminology and full understanding of how to differentiate between links. Within the social network analysis field, however, researchers have investigated how individuals interact to form different types of links and how those link types can influence individuals, groups, and entire organizations. Figure 1 provides a summary of how the two quality dimensions examined in the present study, link strength and valence, might interact to create links that are qualitatively different in ways that are likely quite meaningful within a work environment.

	Negative	Positive
Strong	A coworker you dislike/would rather avoid with whom you frequently interact nearly everyday	A supportive coworker with whom you frequently interact nearly everyday
Weak	A coworker you dislike/would rather avoid with whom you infrequently interact (i.e., once a week/month)	A supportive coworker with whom you interact infrequently (i.e., once a week/month)

Figure 1   Examples of different link types

Research into social networks has demonstrated how differences in a link's strength and valence can influence employees' work behaviors. In the social network analysis literature, link strength is typically conceptualized on a spectrum of frequency examining how often two individuals interact. For example, Granovetter (1973) described a weak link as one characterized by infrequent interaction between two individuals. Furthermore, he found that conversations between weak links often involved exchanging novel information (e.g., compensation analyst meeting with a front-line worker), and that weak links are typically less likely to be influenced by emotional outbursts than strong links. In contrast, Nelson (1989) found that strong links (i.e., characterized by frequent interactions), facilitated greater cohesion, support, and emotional connections between individuals. Nelson also found information flow between strong links tended to focus around familiar topics (e.g., conversation between team members working on a project).

While social network analysis conceptualizes link strength in terms of the frequency of interactions between two individuals, the performance-feedback literature provides support for a second dimension of link strength, link importance, although typically described in terms of a feedback source's power(i.e., the influence the one giving feedback has over the rewards and consequences expected by the target of feedback; Ilgen, Fisher, & Taylor, 1979; Smither, Brett, & Atwater, 2008). Link importance describes how specific links, such as links to a parent or direct supervisor, hold more meaning and influence over one's life than more common links, such as a link between two coworkers that only trade small talk during monthly meetings. Therefore, link importance can be conceptualized as a characteristic of link strength that determines how significant a link is to maintaining or improving one's social and professional needs. Thus, it is important to think of link strength not only in terms of how often two

individuals interact, but also by how important a link is perceived to be by an individual.

Research has also identified differences in workplace outcomes between positive and negative links. Notably, Sparrowe, Liden, Wayne, and Kraimer (2001) demonstrated how negative links impacted individual and group performance. In their research, groups with a specific form of negative link labeled hindrance networks (i.e., groups with an individual who consistently initiates negative interactions and/or conflict with other members) demonstrated significantly lower levels of individual and group performance. Additionally, negative links in groups have been shown to create higher perceptions of conflict (Labianca, Brass, & Gray, 1998) as well as decreases in job satisfaction, organizational commitment, cohesion in work and social groups, and also an increase in turnover intent (Morrison, 2008). Furthermore, in researching older adult women's social circles, Rook (1984) found that, while stronger links predicted increased well-being, negative relationships, regardless of strength, produced significantly greater influence on overall well-being than positive links.

Previous research has identified many differences between various types of links. Everett and Borgatti (2014) provides one of the more compelling arguments for why research along these lines is important. By presenting an example involving three individuals (A, B, C), Everett and Borgatti illustrate how negative relationships can fundamentally alter the make-up of a social network. To flesh out the example, one can think of A as someone who collects data, B as one who analyzes and reports on the data, and C as an end-user of those reports. Thus, in a positive network where A and B share a positive link, B and C share a positive link, and A and C do not know or interact with one-another, information can travel freely from A to C by virtue of B. However, if the relationship between B and C is changed from a positive link to a negative link, where B and C actively dislike and avoid one another, it now requires greater resources and

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stress for B to communicate information from A to C. In this scenario, it is much less likely for information to travel freely from A to C, and could result in B involving a separate party to pass along reports and information from A to C. Therefore, in network analyses, positive and negative links create different types of networks that operate in fundamentally different ways.

Research on the qualities of links have demonstrated that different types of links can greatly influence how one operates at work. That is, the many different links formed between employees that make up work groups, teams, departments, and whole organizations, play an important role in one's performance and wellbeing at all levels of an organization. Thus, there are likely clear benefits to organizations who actively work to mitigate negative links between employees and promote a positive, interconnected culture. As other fields have already documented clear evidence that differences in a link's strength and valence can greatly influence how individuals and organizations operate at work, it seems prudent to re-evaluate how we currently conceptualize links in I-O relevant research.

The Present Study: Re-Conceptualizing Our Approach to Links

At its core, the present study attempts to better examine how people's workplace links and interconnectedness within an organization influences their behavior at work. The objective for this research was to investigate whether it might be valuable to expand the way we operationalize and study links at work to also include the different qualities of links, strength and valence, rather than focusing on only the quantity of links. This focus is best represented visually via a conceptual nomological network, as shown in Figure 2.
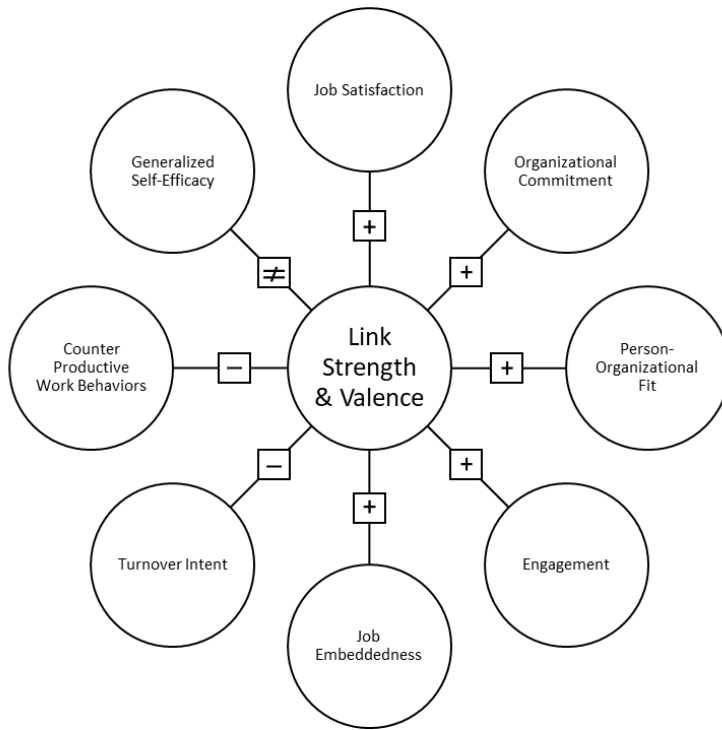
Figure 2   Conceptual network of expected construct relationships

Essentially, the present study is a construct validation effort. Such work requires one to demonstrate a comprehensive pattern of relationships involving the target constructs (in this case link strength and valence) with a variety of other constructs. Thus, multiple constructs have been chosen in the interest of mapping out links' latent characteristics. Building upon research on social networks, these constructs have been categorized into three distinct groups to demonstrate the full pattern of relationships necessary in construct validation: (1) *anticipated evidence for convergent validity* (job satisfaction, organizational fit, engagement, and organizational commitment), (2) *anticipated evidence for divergent validity* (turnover intention, counter productive work behaviors), and (3) *anticipated evidence for discriminant validity* (self-efficacy). Each of the anticipated linkages summarized in Figure 2 are discussed in the following sections; definitions for individual constructs are summarized in Table 1.

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Table 1   Construct Definitions for Variables in the Present Nomological Network Analyses

Construct	Expected Relationship	Definition
Job Satisfaction	Positive	Degree of positive affect toward one's organization or job (Bateman & Organ, 1983).
Organizational Commitment	Positive	A function of an employee's target (i.e., person or institution), the strength of the bond, and psychological state influencing the target (Klein, Molloy, & Brinsfield, 2012).
Engagement	Positive	A persistent, fulfilling, positive, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-romá, & Bakker, 2002). Kahn (1990) provided three psychological conditions necessary for engagement to occur: (1) *meaningfulness* (i.e., value gained from participating), (2) *availability* (i.e., having the necessary physical/psychological resources to perform tasks), and (3) *safety* (i.e., ability to employ oneself without fear of negative reprisal from coworkers/supervisor).
Person-Organization Fit	Positive	The alignment between an individual's values and beliefs to those held by an organization. (Kristof-Brown, Zimmerman, & Johnson, 2005).
Job Embeddedness	Positive	The factors enmeshing an employee into an organization. Factors include community and organizational dimensions of: *links* (i.e., the number of connections to people, activities, or the organization), *fit* (i.e., the degree of alignment in values and beliefs between an organization and an employee), and *sacrifice* (i.e., the cost of losing links and their accompanying benefits; Mitchell et al., 2001)
Turnover Intent	Negative	An employee's reported likelihood of leaving an organization (Roodt, 2004).
Counterproductive Work Behaviors	Negative	Behaviors with the *intent* to have a detrimental impact on either the organization and/or its members (Fox, Spector, & Miles, 2001).
Self-efficacy	No Relationship	One's belief in their ability to accomplish a task or goal (Bandura, 1977). Bandura reported self-efficacy derived from four sources: (1) performance accomplishments, (2) observing others' experience, (3) verbal suggestions (i.e., convincing yourself you can accomplish something), and (4) physiological states or the level of stress one is experiencing.

Anticipated Evidence for Convergent Validity

Research has demonstrated that outcomes from negative links (e.g., increased conflict/perceptions of conflict, animosity, withdrawal, and avoidance behaviors) have an adverse impact on an employee's overall job satisfaction, organizational commitment, engagement, and person-organization fit (Labianca et al., 1998; Morrison, 2008; Sparrowe et al., 2001). In contrast, positive links have been found to foster stronger group cohesion, communication, and general well-being (Nelson, 1989; Rook, 1984). In examining how these constructs react to these outcomes from different quality dimensions of links, it is reasonable to expect a positive relationship between each construct and a link's strength and valence.

Hypothesis 1: Perceived job satisfaction, organizational commitment, engagement, job embeddedness, and person-organization fit are positively related to (a) link strength and (b) positively oriented link valence.

Anticipated Evidence for Divergent Validity

As previously mentioned, negative links are characteristic of increased interpersonal/group conflict, avoidance behaviors, and animosity, as well as decreased job satisfaction, organizational commitment, and engagement (Labianca, 2014; Morrison, 2008; Sparrowe et al., 2001). Prior research has identified all of these outcomes as antecedents for counterproductive work behaviors (CWBs) and turnover intent (Rubenstein, Eberly, Lee, & Mitchell, 2017; Spector et al., 2006). Therefore, it is reasonable to expect these constructs to share a negative relationship with link strength and valence. However, based on the CWB literature, it is possible that the relationship between CWB likelihood, link strength, and link valence is more complex. That is, Fox et al. (2001) demonstrated a positive relationship between

negative emotion and CWB likelihood. That is, the more negative emotion one experiences the more likely they are to commit a CWB. Therefore, because negative links inherently fosters negative emotion, and the social network analysis literature has documented differences in emotional reactivity between strong and weak links (Granovetter, 1973; Nelson, 1989), it is possible that as a link becomes either weaker or stronger, the effects of link valence could be amplified. Thus, a research question is added to test for possible moderation effects.

Hypothesis 2: Turnover intent and CWB likelihood are negatively related to (a) link strength and (b) positively oriented link valence.

Research Question 1: The relationship between positvely oriented link valence and CWB likelihood is moderated by link strength, such that the effects of link valence are amplified when links are strong and weakened when links are weak.

Anticipated Evidence for Discriminant Validity

Self-efficacy represents an individual's belief in their ability to accomplish various goals or tasks given their current skillset (Bandura, 1977), and antecedents for self-efficacy have been demonstrated to focus largely around previous accomplishments and task-performance (Locke, Frederick, Lee, & Bobko, 1984). Because these are personal beliefs centered around an individual's prior achievements and performance, it is unlikely that differences in link strength and valence within one's social network would hold much influence. While feedback on performance offers opportunities for one's links to influence their self-efficacy, research has found that, even with negative feedback on task-performance, general self-efficacy remains relatively stable (Miyake, 2000). Therefore, given that antecedents of self-efficacy are largely

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based around an employee's perception of their own prior accomplishments and performance, and relatively stable after feedback, it is reasonable to expect general self-efficacy to be relatively robust to differences in link strength and valence.

Hypothesis 3: Self-efficacy is expected to have weak, if any, relationships with (a) link strength and (b) positive link valence.

Anticipated Covariates

When testing the preceding hypotheses, it was necessary to consider a variety of other demographic and work-related factors that have been shown to influence the constructs described in this study and may play a role in the present investigation. Specifically, the following demographic and other individual difference factors were measured: personality traits, state affect, tenure, organization size, hours worked per week, number of previous jobs, gender, ethnicity, age, level of education, marital status, and number of dependents. These variables represent a wide array of potential influences on the hypothesized construct relationships ranging from opportunities to build and maintain links (tenure, job-type, organization size, marital status, number of dependents, and perceived social support; Helliwell & Putnam, 2004; Leana & van Buren III, 1999), to perceptions of fit within an organization (sex, ethnicity, age, and level of education; Cable & DeRue, 2002), to turnover intent (number of previous jobs; Rubenstein et al., 2017), and to survey responses in general (general affect; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

CHAPTER 2

METHODOLOGY

Participants

Participants were contacted through a combination of the university's undergraduate student research participation program as well as through a snowball approach targeted at the researcher's personal and professional contacts. Approximately 1,650 individuals were contacted with a total of 375 participants completing the study (23% response rate). Because this thesis project was targeted at workplace links, participants were required to meet four inclusion criteria in order for their data to be included in analyses: (1) be at least 18 years of age, (2) currently work at least part-time in the United States of America (USA), (3) have worked for at least six months in their current organization to ensure adequate time for links to have formed, and (4) be able to read and write comfortably in English. Therefore, of the 375 who responded, 102 respondents were excluded because they did not meet all of the inclusion criteria for the study. For the remaining 273 respondents, no additional exclusions were necessary. The final sample consisted of 273 participants (response rate against overall target sample = 55%). All reported statistics past this point are based on this final sample.

Respondents ranged in age from 18-67 years with a mean age of 49 years old ($SD =$ 10.84). The number of past jobs worked by respondents in the last five years ranged from 0-12 with a mean of 2.40 prior jobs ($SD = 1.63$), and respondents average tenure in their current

organization varied between six months and 27.50 years with a mean of 3.16 years ($SD = 4.22$). Respondents worked an average of 29.54 hours per week, and the median size of respondents' organizations was 50 people ($SIR = 20, 200$).

Female respondents comprised 80.6% of the sample. The most prevalent ethnicity represented was White (82.4%), followed by Black/African American (5.5%), Asian (5.5%), Multi-Racial (3.7%), and Hispanic/Latino (1.8%). Regarding marital status, the majority of the sample indicated they were single (71.1%), followed by married (24.2%), divorced (3.7%), and separated (0.7%). The median number of dependents per respondent was 0. Regarding highest level of education achieved, the majority of the sample indicated at least some college education (38.5%), followed by attaining a bachelor's degree (15.8%), master's degree (13.9%), high school diploma or GED equivalent (11%), associate's degree (9.9%), some graduate level education (5.9%), PhD (4%), and some high school education (1.1%).

Procedure

The procedures for this project were approved by the university's Institutional Review Board (IRB) prior to data collection. Participants were asked to respond to a securely managed online survey distributed through Qualtrics' internet survey system. The survey required approximately 20 minutes to complete and was distributed using the following strategies: (1) a research participation program at a medium-sized public university in the southeastern USA, (2) emails distributed by managers in multiple organizations across the USA including the human-resources' (HR) office at a medium-sized southeastern-based logistics and transportation company, the HR office at a large-sized southeastern-based flooring manufacturer, a small-sized southeastern-based city government agency, a small-sized southeastern based social worker

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office, two small-sized western and midwestern-based federal government research agencies, a large-sized university's HR listserv on the eastern coast of the USA, a small-sized media production organization located in the northeastern USA, a medium-sized southeastern-based community college's academic aid department, and faculty and staff at a small-sized private school located in the south-eastern USA, and (3) direct and indirect professional and personal appeals through social and professional social-networking groups (e.g., Facebook, LinkedIn).

Participants (and non-participants) were offered the chance to enter a drawing for one of 15, $50.00 gift cards as an incentive to encourage participation. Due to the nature of the recruitment strategy, participants could not be screened by the inclusion criteria prior to starting the study. Therefore, the first four questions in the survey assessed the inclusion criteria. Participants who failed to meet the inclusion criteria were still allowed to enter the incentive drawing prior to being exited from the survey.

Measures

The following measures were used to operationalize the variables included in this study and are presented in their order of appearance in the survey. Altogether, Participants responded to approximately 162 items depending on the number of links participants provided in the link strength and valence measures. All of the measures are included in an annotated copy of the survey in Appendix A. For the sake of clarity within this manuscript, some of the formatting from the online survey has been removed.

Link strength and valence. Because there are no empirically tested measures for assessing these quality dimensions of link strength and valence, the following measures were developed by the researchers. Participants responded to two sets of questions assessing link

strength and valence. After being asked to reconsider their last seven days at work, participants were asked to indicate an approximation of the number of employees at their organization that they interacted with. Participants were then presented with descriptions for four different types of links adapted from Figure 1 and asked to estimate the total proportion of their workplace links that matched each description using a slider bar from 0 to 100. These items were used as formative assessments to inform on respondents' general perception of strong links, weak links, positive links, and negative links. To score these items, overall averages were taken by parceling items into relevant combinations (e.g., strong positive and strong negative to determine the proportion of strong links, weak positive and weak negative to determine the proportion of weak links, weak positive and strong positive to determine the proportion of positive links, and weak negative and strong negative to determine the proportion of negative links).

Following the general questions on one's proportion of overall link types, participants were asked to again consider all of the individuals they interacted with at work in the last seven days and provide up to 10 people with whom they regularly interacted with at work. Participants then rated each person on three dimensions, link strength (importance), link strength (frequency), and link valence. The importance dimension of link strength was assessed by having participants use a slider bar from 0 to 100 to indicate how important respective links were to their general social and work-related needs. The frequency dimension of link strength was assessed by asking participants to rate how often they interacted with the respective link using a five-point Likert scale from 1 (*never)* to 5 (*every day)*. Finally, link valence was assessed by asking participants to rate how well they got along with a respective link using a seven-point Likert scale from 1 (*dislike strongly*) to 7 (*like strongly*). To score these items, link strength was calculated by first creating a product variable of link importance and frequency for each link provided, and then

taking the mean across all product variables. Link valence was calculated by simply taking the mean valence response across all links provided by each participant.

Self-efficacy. Participants responded to the eight-item New Generalized Self Efficacy scale developed by Chen, Gully, and Eden (2001). Participants responded to items using a seven-point scale from 1 (*disagree strongly*) to 7 (*agree strongly*). This scale is scored by summating the total score across items to indicate one's level of self-efficacy and yields a Cronbach's alpha of .86 - .89. Internal reliability for the present study was consistent with previous research, $\alpha =$ .90.

Job satisfaction. Participants responded to the eight item, abridged job in general (AJIG) scale developed by Brodke et al. (2009). Participants responded to statements about their job with "*yes*," "*no*," and "*cannot decide.*" The AJIG is scored by first reverse coding negatively phrased items and then taking the total sum across items to indicate one's overall level of job satisfaction. Similar to prior work by Brodke et al. reporting a Cronbach's alpha of .92, internal consistency in the present study yielded $\alpha = .84$.

Organizational commitment. Participants responded to the four-item Klein et al. Unidimensional Target-free (KUT) scale developed by Klein, Cooper, Molloy, and Swanson (2014). Participants responded to items using a seven-point Likert scale from 1 (*not at all*) to 7 (*extremely*). The KUT is scored by taking the average score from the four items to indicate one's level of commitment. Internal consistency for this scale typically ranges between .86 and .98; for the present study $\alpha = .96$.

Engagement. Participants responded to the nine-item work and well-being survey developed by Schaufeli, Bakker, and Salanova (2006). Participants responded to items using a seven-point Likert scale from 0 (*never*) to 6 (every *day*). The work and well-being survey provides an overall rating of engagement by taking the average of all items. Reliability for the scale typically reports a Cronbach's alpha between .70 and .90. Consistent with prior work, internal consistency for the present study was .91.

Person-organization fit. Participants responded to a three-item scale developed by Cable and DeRue (2002). Participants responded to items using a seven-point Likert scale from 1 (*disagree strongly*) to 7 (*agree strongly*). This scale was scored by taking the average across all items, and, consistent with past research reporting a Cronbach's alpha of .91, internal consistency for the present study was strong ($\alpha = .95$).

Job embeddedness. Participants responded to the seven-item job embeddedness scale developed by Crossley, Bennett, Jex, and Burnfield (2011). This scale differs from the original measure of job embeddedness developed by Mitchell et al. (2001) in that, rather than a composite scale measuring dimensions of embeddedness, this scale provides a global assessment of one's general level of embeddedness in an organization. Participants were asked to consider work and non-work factors while responding to items using a seven-point Likert scale from 1 (*disagree strongly*) to 7 (*agree strongly*). This scale was scored by taking the average across all items to indicate the level of embeddedness in an organization. Reliability for the scale typically reports a Cronbach's alpha of .88. Consistent with prior work, internal consistency for the present study was .91.

Turnover intent. Participants responded to the six-item TIS-6 developed by Roodt (2004). Participants responded using a five-point scale from 1 (*never*) to 5 (*always*). The TIS-6 was scored by first reversing the direction of items five and six to be consistent with the other items. As the TIS-6 is a measure of one's intention to leave, higher scores indicate a higher likelihood of leaving an organization. Past research has typically reported a Cronbach's alpha of .91; in the present study internal consistency was .84.

Counterproductive work behaviors. Participants responded to the 10-item behavioral checklist developed by Spector, Bauer, and Fox (2010). Participants responded to items using a five-point scale from 1 (*never*) to 5 (*every day*). The scale is scored by calculating a total sum for all items. In their research, Spector et al. reported two Cronbach's alphas, $\alpha = .79$ for a sample of employees and $\alpha = 86$ for the same sample of employees' supervisors. In the present study, internal consistency was observed at $\alpha = .77$.

Covariates. Following the measures of state affect, personality, and perceived social support, participants responded to demographic questions on the following variables: Tenure, organization size, hours worked per week, number of previous jobs, sex, ethnicity, age, level of education, marital status, and number of dependents.

State affect was measured using the 10-item international positive and negative affect schedule short form (I-PANAS-SF) developed by Thompson (2007). Participants responded to items using a five-point Likert scale from 1 (*never*) to 7 (*always*). Reliability for the positive affect (PA) and negative affect (NA) scales reported Cronbach's alphas of .78 and .76 respectively, consistent with results from the original 20-item PANAS developed by Watson and Clark (1999). The I-PANAS-SF is scored by taking the average across items for each dimension (e.g., positive or negative affect). Consistent with previous research, the present study reported

internal consistency of $\alpha = .73$ and $\alpha = .74$ for negative and positive affect, respectively.

Personality was measured using the big-five minimarker scale developed by Thompson (2008). The big-five minimarker consists of five, eight item scales representing each of the five major personality dimensions. Participants responded to items using a five-point Likert scale from 1 (*completely inaccurate*) to 5 (*completely accurate*). Each scale is scored by taking the average across all items for the respective scale. Cronbach's alpha reliability coefficients for each dimension typically fall between .84 and .92. In the present study, the observed alphas were as follows: extraversion ($\alpha = .92$), openness ($\alpha = .76$), emotional stability ($\alpha = .79$), conscientiousness ($\alpha = .87$), and agreeableness ($\alpha = .84$).

Perceived social support was measured using two scales to measure work and non-work social support. Non-work social support was measured using the eight-item modified medical outcomes social support survey (mMOS-SS) developed by Moser, Stuck, Silliman, Ganz, and Clough-Gorr (2012). Participants responded to items from the Moser et al. (2012) scale using a five-point Likert scale from 1 (*none of the time*) to 5 (*all of the time*). The mMOS-SS is scored by taking the average of responses across all items. In past research, observed internal consistency reliabilities for this measure range from .88 to .93. In the present study, the observed reliability was $\alpha = .95$. Work related social support was measured using the four-item job social support scale developed by Van Yperen and Hagedoorn (2003). Participants responded to the Van Yperen and Hagedoorn (2003) scale using a five-point Likert scale from 0 (*not applicable*) to 4 (*always*). The scale was scored by taking the average across all items. Previous studies have reported internal consistency reliabilities for this measure at .80; in the present study alpha = .83.

CHAPTER 3

RESULTS

Prior to testing any hypotheses, the data were cleaned and prepared for analysis as follows. First, identifying information (including emails to participate in the incentive drawing and other embedded data collected through Qualtrics) were moved into a separate spreadsheet on a securely managed computer. Second, participants who did not meet inclusion criteria and/or did not complete at least 80% of the survey were excluded from the dataset. Scale mean imputation was used to fill missing data in the case of mean-score scales, after removing all of a participant's responses to any given scale for which responses were provided to less than 25% of the items. Because the distributions for some demographic variables were particularly skewed, marital status, gender, ethnicity, and tenure were recoded as follows: (1) *marital status* was recoded into a new variable, *single,* by recoding responses indicating single as 1 and all other responses as 0, (2) *gender* was recoded into a new variable, *female*, by recoding responses indicating female as 1 and all others responses as 0, (3) *ethnicity* was recoded into a variable, *majority vs. minority status*, by recoding responses indicating white as 1 and all other responses as 0, and (4) *tenure* was recoded into a new variable, *tenure 2+ years*, by recoding all values above the 50th percentile (tenure = 2 years) as 1, and all values at and below the 50th percentile as 0. Descriptive statistics and intercorrelations between all study variables are summarized in Table 2.

Table 2   Descriptive Statistics and Correlation Matrix for All Study Variables

		M	*SD*	*N*
1.	Link strength	247.16	86.58	271.00
2.	Link valence	5.63	0.82	271.00
3.	Self-efficacy	48.89	6.00	273.00
4.	Job satisfaction	17.77	6.14	272.00
5.	Organizational commitment	5.19	1.43	273.00
6.	Engagement	3.95	1.30	273.00
7.	Person-organization fit	4.93	1.58	273.00
8.	Job-embeddedness	4.17	1.41	273.00
9.	Turnover intent	2.99	0.83	273.00
10.	Counterproductive Work Behaviors	15.84	4.91	273.00
11.	Negative affect	9.43	2.99	273.00
12.	Positive affect	18.42	3.46	273.00
13.	Extraversion	3.36	0.93	273.00
14.	Openness	3.79	0.60	273.00
15.	Emotional stability	2.87	0.76	273.00
16.	Conscientiousness	4.05	0.67	272.00
17.	Agreeableness	4.29	0.56	272.00
18.	Nonwork social support	3.85	1.11	273.00
19.	Job-related social support	3.06	0.74	267.00
20.	Age	26.94	10.84	273.00
21.	Number of prior jobs	2.43	1.63	273.00
22.	Tenure 2+ years	.36	0.48	270.00
23.	Hours worked per week	29.54	13.21	273.00
24.	Single	.71	0.45	272.00
25.	Level of education	4.22	1.78	273.00
26.	Number of dependents	.46	1.11	272.00
27.	Female	.81	0.40	273.00
28.	Majority vs. minority status	.82	0.38	273.00

		1.		2.		3.		4.		5.	
1.	Link strength										
2.	Positively Oriented link valence	.52	**								
3.	Self-efficacy	.21	**	.31	**						
4.	Job satisfaction	.33	**	.40	**	.35	**				
5.	Organizational commitment	.40	**	.35	**	.30	**	.58	**		
6.	Engagement	.37	**	.34	**	.38	**	.66	**	.70	**
7.	Person-organization fit	.23	**	.32	**	.19	**	.48	**	.59	**
8.	Job-embeddedness	.34	**	.31	**	.20	**	.52	**	.73	**
9.	Turnover intent	-.30	**	-.38	**	-.29	**	-.71	**	-.63	**
10.	Counterproductive Work Behaviors	-.21	**	-.37	**	-.25	**	-.30	**	-.27	**
11.	Negative affect	-.05		-.19	**	-.35	**	-.35	**	-.22	**
12.	Positive affect	.33	**	.19	**	.33	**	.51	**	.57	**
13.	Extraversion	.12	*	.12	*	.18	**	.21	**	.21	**
14.	Openness	.11		.10		.26	**	.12	*	.18	**
15.	Emotional stability	-.07		-.07		-.28	**	-.16	*	-.08	
16.	Conscientiousness	.19	**	.13	*	.17	**	.19	**	.28	**
17.	Agreeableness	.19	**	.29	**	.28	**	.25	**	.34	**
18.	Nonwork social support	.21	**	.26	**	.16	**	.13	*	.20	**
19.	Job-related social support	.40	**	.48	**	.30	**	.55	**	.51	**
20.	Age	.26	**	.12	*	.11		.14	*	.20	**
21.	Number of prior jobs	-.06		-.06		-.09		-.07		-.13	*
22.	Tenure 2+ years	.04		-.06		.07		.04		.04	
23.	Hours worked per week	.23	**	.09		.06		.06		.14	*
24.	Single	-.17	**	-.10		-.06		-.14	*	-.13	*
25.	Level of education	.12	*	.14	*	.13	*	.13	*	.02	
26.	Number of dependents	.06		-.03		.08		.07		.09	
27.	Female	-.03		.05		.02		.06		.14	*
28.	Majority vs. minority status	-.02		.08		.01		.06		.03	

		6.		7.		8.		9.		10.	
6.	Engagement										
7.	Person-organization fit	.52	**								
8.	Job-embeddedness	.61	**	.51	**						
9.	Turnover intent	-.68	**	-.52	**	-.60	**				
10.	Counterproductive Work Behaviors	-.35	**	-.35	**	-.18	**	.37	**		
11.	Negative affect	-.23	**	-.28	**	-.12		.43	**	.33	**
12.	Positive affect	.74	**	.42	**	.56	**	-.52	**	-.25	**
13.	Extraversion	.25	**	.10		.23	**	-.18	**	.01	
14.	Openness	.20	**	.20	**	.15	*	-.10		-.15	*
15.	Emotional stability	-.14	*	-.11		.01		.16	**	.18	**
16.	Conscientiousness	.28	**	.21	**	.22	**	-.19	**	-.32	**
17.	Agreeableness	.39	**	.35	**	.26	**	-.31	**	-.49	**
18.	Nonwork social support	.15	*	.19	**	.22	**	-.17	**	-.12	*
19.	Job-related social support	.49	**	.39	**	.48	**	-.62	**	-.31	**
20.	Age	.21	**	.04		.09		-.10		.01	
21.	Number of prior jobs	-.05		-.08		-.11		.02		-.06	
22.	Tenure 2+ years	-.01		.01		.19	**	.04		.16	*
23.	Hours worked per week	.20	**	.04		.09		-.05		.02	
24.	Single	-.13	*	-.04		-.07		.04		.02	
25.	Level of education	.15	*	.03		.01		-.08		-.02	
26.	Number of dependents	.14	*	-.05		.00		-.03		.04	
27.	Female	.11		.14	*	.17	**	-.08		-.07	
28.	Majority vs. minority status	.08		.01		.11		-.09		-.02	

		11.		12.		13.		14.		15.		16.	
11.	Negative affect												
12.	Positive affect	-.08											
13.	Extraversion	-.25		.23	**								
14.	Openness	-.11		.15	*	.07							
15.	Emotional stability	.44	**	-.10		-.12	*	-.11					
16.	Conscientiousness	-.19	**	.32	**	.02		.07		-.14	*		
17.	Agreeableness	-.33	**	.32	**	.16	**	.26	**	-.19	**	.33	**
18.	Nonwork social support	-.04		.14	*	.01		.02		.02		.13	*
19.	Job-related social support	-.31	**	.40	**	.20	**	.12		-.09		.21	**
20.	Age	.13	*	.13	*	.07		.13	*	-.09		-.02	
21.	Number of prior jobs	.01		-.10		-.08		-.06		.06		.02	
22.	Tenure 2+ years	.06		.07		.14	*	.04		-.05		-.10	
23.	Hours worked per week	.17	**	.07		.02		.12		-.10		.06	
24.	Single	-.15	*	-.05		-.02		-.07		.06		.08	
25.	Level of education	.12		.05		.02		.13	*	-.10		-.03	
26.	Number of dependents	-.03		.02		.09		.06		-.07		-.07	
27.	Female	.07		.09		.07		-.08		.26	**	.10	
28.	Majority vs. minority status	.12		.08		-.05		-.07		.11		.05	

		17.		18.		19.		20.		21.		22.	
17.	Agreeableness												
18.	Nonwork social support	.18	**										
19.	Job-related social support	.29	**	.28	**								
20.	Age	-.06		.07		.00							
21.	Number of prior jobs	-.03		-.07		.04		-.23	**				
22.	Tenure 2+ years	-.05		.05		-.07		.41	**	-.36	**		
23.	Hours worked per week	-.05		.16	**	.00		.56	**	-.22	**	.29	**
24.	Single	.02		-.16	**	-.02		-.71	**	.19	**	-.32	**
25.	Level of education	-.05		.14	*	.07		.50	**	.01		.17	**
26.	Number of dependents	.01		-.03		.04		.28	**	-.22	**	.17	**
27.	Female	.28	**	.20	**	.13	*	-.07		.02		.02	
28.	Majority vs. minority status	.01		.20	**	.05		.01		-.05		.01	

		23.		24.		25.	26.		27.		28.
24.	Hours worked per week										
25.	Single	-.50	**								
26.	Level of education	.56	**	-.46	**						
27.	Number of dependents	.21	**	-.35	**	.08					
28.	Female	-.10		.06		-.10	-.01				
29.	Majority vs. minority status	.06		.03		.02	-.15	*	-.01		

Hypotheses Tests

The hypotheses were tested using the final set of cleaned data ($N = 273$). Because it was not clear how participants were responding to the items measuring general perceptions of link-types (i.e., participants indicating, out of a total of 100%, that each of the four link-types represented at least 80% of their overall links), only the items measuring dimensions of link strength (i.e., link importance and frequency of interaction) and positively oriented link valence for individual links were used in hypothesis testing. Thus, only this latter operationalization of the link strength and link valence constructs was included in the analyses reported past this point.

Bivariate and partial correlation analyses were used to test all formal hypotheses, while the PROCESS macro tools (v.3), developed by Hayes (2017), were used to test Research Question 1. Bivariate correlation analysis was used to test the significance of the hypothesized relationships between link strength and positively oriented link valence, and the various other constructs targeted in this study. With respect to Hypothesis 1, link strength (1a) and positively oriented link valence (1b) were expected to have a positive relationship with job satisfaction, organizational commitment, engagement, person-organization fit, and job-embeddedness. Link strength was significantly ($p < .01$) and positively correlated with job satisfaction ($r = .33$), organizational commitment ($r = .40$), engagement ($r = .37$), person organizational fit ($r = .23$),

and job embeddedness ($r = .34$), supporting Hypothesis 1a. Likewise, positively oriented link valence also demonstrated significant ($p < .01$) and positive relationships with job satisfaction ($r = .40$), organizational commitment ($r = .35$), engagement ($r = .34$), person organizational fit ($r = .32$), and job embeddedness ($r = .31$), supporting Hypothesis 1b.

Turning to Hypothesis 2, link strength (2a) and positively oriented link valence (2b) were expected to have a negative relationship with turnover intent and CWB likelihood. Link strength was significantly ($p < .01$) and negatively related to turnover intent ($r = -.30$) and CWB likelihood ($r = -.21$), supporting Hypothesis 2a. Similarly, positively oriented link valence was also significantly ($p < .01$) and negatively related to turnover intent ($r = -.38$) and counterproductive work behaviors ($r = -.37$), supporting Hypothesis 2b.

Hypothesis 3, was that link strength (3a) and positively oriented link valence (3b) have a weak or nonsignificant relationship with self-efficacy. Both link strength and positively oriented link valence had significant ($p < .01$) positive relationships with self-efficacy ($r = .21$ and $r = .31$ for link strength and positively oriented link valence, respectively). Thus, there was no evidence from this analysis to support Hypothesis 3. Another way of testing this hypothesis is to compare the magnitude of the correlations between self-efficacy and link strength and positively oriented link valence to the correlations of these link qualities with the other targeted constructs. To do this, two separate analyses were performed, one focusing on link strength and the other on positively oriented link valence, using the COCOR software developed by Diedenhofen and Musch (2015). Support for Hypothesis 3 using this technique would be found if the correlations of link strength and positively oriented link valence with self-efficacy were weaker than those with the other targeted constructs.

To conduct the analyses, the average correlations between both link strength and positively oriented link valence to the target constructs, minus self-efficacy, were input into COCOR ($r = .31$ and $r = .35$ for link strength and positively oriented link valence, respectively). Then for each analysis, the relationship for either link strength or positively oriented link valence with self-efficacy was added, as well as the average correlation for self-efficacy to the target constructs ($r = .28$). Finally, sample size ($n = 268$), direction (one-tailed test), and confidence level (95%) were input, allowing COCOR to conduct 10 separate tests to identify potential differences in correlation magnitudes. All tests for both link strength and positively oriented link valence were nonsignificant. Due to the number of tests and nonsignificant findings, the full analyses are provided in Appendix C and only the average p-values across all tests are reported here for both link strength ($p = .08$) and positively oriented link valence ($p = .28$). As these COCOR analyses also yielded no significant differences in the strength of the bivariate relationships between self-efficacy and link strength/valence compared to the other target constructs, Hypothesis 3 was not supported.

To further test all three hypotheses for this study, an alternative round of correlational analyses was conducted, this time controlling for covariates that demonstrated significant relationships ($p < .05$) with link strength and positively oriented link valence respectively. However, as shown in Table 3, when controlling for covariates relevant to link strength and positively oriented link valence, nearly all of the relationships were nonsignificant. Thus, these results only partially support Hypotheses 1b and 2b. Reasons for why these patterns of relationships occurred are discussed later.

Table 3 Summary of Partial Correlation Analyses with All Relevant Covariates

	Link Strength	Positively Oriented Link Valence
Job satisfaction	.05	.19**
Organizational commitment	.07	.07
Engagement	.02	.12*
Person-Organization fit	-.01	.12*
Job-embeddedness	.05	.08
Turnover-intent	.04	-.12*
Counterproductive work behaviors	-.08	-.24**
Self-Efficacy	.03	.13*
**. Correlation is significant at 0.01 level		
*. Correlation is significant at 0.05 level		

Note. $N = 263$; both analyses were conducted as one-tailed tests of significance. Covariates for link strength include education, age, hours worked per week, single, positive affect, extraversion, job-related social support, nonwork social support, conscientiousness, and agreeableness; Covariates for positively oriented link valence included education, age, negative affect, positive affect, extraversion, conscientiousness, and agreeableness

Research question. In addition to the three core hypotheses that this study was designed to test, the present data made it possible to explore whether link strength might moderate the relationship between positively oriented link valence and CWB likelihood. More specifically, it was intuitively expected that the moderating effect of link strength would be different at different levels of link strength, such that the effects of positively oriented link valence on CWB likelihood would be amplified by stronger links and less-so by weaker links.

To probe for this effect, the PROCESS macro tools (Hayes, 2017) were used to assess both the significance of the moderation as well as where it occurs (i.e., high and/or low levels of link strength). The PROCESS analysis was run with and without covariates in the model. Because including covariates resulted in no significant changes in R^2 or interpretation of significant results, the simpler of these models (i.e., without covariates) is presented. As shown in Table 4, the research question was not formally supported, though the anticipated interaction

effect fell just short of the rather stringent alpha criterion of .05 (b =-0.0064, p = .0638).

Table 4   Test of The Interactive Effect of Link Strength and Positively Oriented Link Valence
on CWB Likelihood

Model						
	coeff	*se*	*t*	*p*	*LLCI*	*ULCI*
Constant	20.0094	4.7951	4.1729	0	10.5683	29.4504
Positively Oriented Link Valence	-0.6494	0.8865	-0.7326	0.4645	-2.3947	1.0959
Link Strength	0.0354	0.0201	1.7624	0.0791	-0.0041	0.0749
Link Valence X Link Strength	-0.0064	0.0035	-1.861	0.0638	-0.0133	0.0004
Model Summary						
R	*R²*	*MSE*	*F*	*df1*	*df2*	*p*
0.3821	0.146	20.8338	15.2176	3	267	0
Test(s) of highest order unconditional interaction(s):						
	ΔR^2	*F*	*df1*	*df2*	*p*	
Link Valence X Link Strength	0.0111	3.4633	1	267	0.0638	

Note. N = 271; analysis conducted using the PROCESS macro tools developed by Hayes (2017).
No covariates are included in the model.

CHAPTER 4

DISCUSSION AND CONCLUSION

The purpose of the present study was to explore whether there is value or utility in expanding the way in which workplace links are conceptualized and studied in I-O related research. The present study revisits decades of research in I-O psychology and social network analyses that conceptualized links as solely a function of either the number of links one held in the workplace (Mitchell et al., 2001), or the perception of available social support (Halbesleben, 2006; Johnson & Hall, 1988).

Exploring the Unexpected Nonsignificant Findings

Given the breadth of theoretical support for these hypotheses, it was surprising that the hypothesized effects did not emerge within the present data. One possible explanation for these results is that the pattern of relationships for link strength and positively oriented link valence are being attenuated by a similar construct. The most likely culprit would be social support, given that it has historically been used to measure links from a different perspective. To explore this possibility, a separate partial correlation was conducted to examine the relationships for link strength and positively oriented link valence with the target constructs excluding social support as a covariate. As can be seen in Table 5, by removing social support from the covariates, the expected pattern of relationships becomes more clear. For positively oriented link valence, only the relationship with self-efficacy is unexpected, whereas, for link strength, only the weak,

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nonsignificant relationship with person-organization fit is unexpected. Thus, while they should

be interpreted cautiously, these results provide stronger, albeit still incomplete, support for

Hypotheses 1 and 2.

Table 5   Summary of Partial Correlations Without Social Supports Included as a Covariate

	Link Strength	Positively Oriented Link Valence
Job satisfaction	.17**	.31**
Organizational commitment	.20**	.24**
Engagement	.11*	.21**
Person-Organization fit	.07	.20**
Job-embeddedness	.17**	.22**
Turnover-intent	-.12*	-.28**
Counterproductive work behaviors	-.11*	-.25**
Self-efficacy	.07	.17**
**. Correlation is significant at 0.01 level		
*. Correlation is significant at 0.05 level		

Note. $N = 268$; both analyses were conducted as one-tailed tests of significance. Covariates for link strength include education, age, hours worked per week, single, positive affect, extraversion, conscientiousness, and agreeableness. Covariates for positively oriented link valence include education, age, negative affect, positive affect, extraversion, conscientiousness, and agreeableness.

Research in the social network analysis literature has also indicated that link strength is

characterized by emotional intensity, stronger links moreso than weaker ones (Granovetter,

1973; Nelson, 1989). While aspects of state-affect should clearly be related to the measure for

positively oriented link valence, it is also possible that the items measuring dimensions of link

strength (i.e., importance and frequency) capture elements also measured by positive or negative

affect. Rexamining the bivariate correlations, link strength shares a significant, moderate

correlation with positive affect ($r = .33$; $p < .01$) while, interestingly, positively oriented link

valence shares a smaller, significant correlation with positive affect ($r = .19$; $p < .01$). While it is

unclear why positively oriented link valence shares such a small correlation with positive affect, the more moderate correlation for link strength warrants further investigation. Therefore, a third partial correlation analyis was conducted for link strength and positively oriented link valence, this time excluding both social support and positive affect as covariates.

As can be seen in Table 6, by also removing positive affect as a covariate link strength now significantly correlates with person-organization fit; however, both link strength and positively oriented link valence now correlate significantly with self-efficacy. Interestingly, by also removing positive affect as a covariate, the correlation magnitudes increased significantly for link strength, but not for positively oriented link valence. However, unlike with social support, it is unclear how and why positive affect influences link strength to such an extent, and, therefore these results should be interpreted with caution. Further investigation is necessary to understand how positive affect influences link strength and positively oriented link valence.

Table 6   Summary of Partial Correlations Without Social Support or Positive Affect as Covariates

	Link Strength	Positively Oriented Link Valence
Job satisfaction	.25**	.31**
Organizational commitment	.28**	.25**
Engagement	.24**	.21**
Person-Organizatoin fit	.14*	.22**
Job-embeddedness	.25**	.23**
Turnover-intent	-.21**	-.28**
Counterproductive work behaviors	-.13*	-.26**
Self-efficacy	.12*	.19**
**. Correlation is significant at 0.01 level		
*. Correlation is significant at 0.05 level		

Note. $N = 268$; both analyses were conducted as one-tailed tests of significance. Covariates for link strength include education, age, hours worked per week, single, extraversion, conscientiousness, and agreeableness. Covariates for positively oriented link valence include education, age, negative affect, extraversion, conscientiousness, and agreeableness.

Social Support, Link Strength, and Positively Oriented Link Valence

While the revised analyses reported in this section provide stronger support for the hypotheses, it is important to discuss the influence of social support on the conceptualization of link strength and positively oriented link valence. Although it is unclear what aspects of positive affect are shared with link strength and positively oriented link valence, there are clear similarities between the measures operationalizing link strength, positively oriented link valence, and job-related social support. Given that job-related social support shared moderate correlations with link strength and positively oriented link valence ($r =.40$ and $r = .48$, respectively), it is likely that social support is assessing similar, albeit clearly not all qualities to those measured by link strength and positively oriented link valence. Reexamining the job-related social support scale by Van Yperen and Hagedoorn (2003), these items focused on similar qualities of importance and general support that are assessed by the present study's operationalization of link strength and positively oriented link valence. Specifically, the scale focuses on a link with a direct supervisor, which is naturally considerd more important than a typical link (Ilgen et al., 1979), as well as whether one can "ask" or "rely on" this supervisor, or a coworker, for help, which could not easily occur if the two did not like one another (i.e., positively oriented link valence). Thus, in hindsight it is no surprise that social support confounded early analyses, and, given the similarities between the items measuring social support, link strength, and positively oriented link valence, the analyses summarized in Table 5 without social support included as a covariate provides the most accurate interpretation of the results.

However, all this is not to say that social support should simply not be considered when studying link strength and positively oriented link valence. In the present study, social support was included to see whether link strength and link valence might provide incremental value in

studying links, beyond what is already measured by social support. A series of hierarchical

regression analyses is one possible way to test this. Therefore, a total of nine hierarchical

regression analyses were conducted over the data.

The first hierarchical regression tested whether link strength and positively oriented link

valence accounted for significant variance in job-related social support scores after controlling

for demographic and other covariates. Therefore, job-related social support was regressed onto

the variables using the following steps: (1) demographic covariates, (2) personality dimensions

and positive and negative affect, and finally (3) link strength and positively oriented link valence.

As shown in Table 9, while link strength was a weak predictor of job-related social support, both

link strength and positively oriented link valence accounted for significant changes in R^2 when

added into the model ($R^2 = .38$, $\Delta R^2 = .14$). Furthermore, each significantly predicted

participants' job-related social support scores. These results demonstrate that job-related social

support, link strength, and positively oriented link valence all measure, in part, similar qualities

of links, but also somewhat different qualities.

Table 7   Summary of Hierarchical Regression Analysis for Variables Predicting Job-Related
         Social Support

	Job Related Social Support					
			β			
Predictors	Step 1		Step 2		Step 3	
Age	-.02		-.07		-.13	
Single	-.03		-.10		-.08	
Female	.13	*	.08		.10	
Majority vs. minority status	.05		.07		.07	
Tencode (Tenure)	-.09		-.09		-.03	
Number of prior jobs	.03		.07		.09	
Hours worked per week	-.03		.01		-.02	
Education	.11		.10		.08	
Number of dependents	.05		.03		.05	
Negative affect			-.29	**	-.23	**
Positive affect			.33	**	.29	**
Extraversion			.04		.01	
Openness to experience			.04		.04	
Emotional stability			.09		.06	
Conscientiousness			.02		.01	
Agreeableness			.06		-.03	
Link Strength					.17	**
Positively oriented link valence					.30	**
ΔR^2	.04		.25		.14	
ΔF	1.06		11.83	**	28.80	**
Adjusted R^2	.00		.23		.38	
F	1.06		5.95	**	9.70	**

*Note. N = 260; * p < .05; ** p < .01*

After confirming similarities between job-related social support, link strength, and
positively oriented link valence, another eight hierarchical regressions were conducted to
determine if there were differences in how each of these constructs predicted the target
constructs (job satisfaction, turnover-intent, self-efficacy, etc.). These analyses regressed each of
the target constructs onto link strength, positively oriented link valence, and job-related social
support while controlling for demographic and other covariates by entering the variables into the

models using the following steps: (1) demographic covariates, (2) personality dimensions and positive and negative affect, (3) link strength and positively oriented link valence, and finally (4) job-related social support. Summaries of these analyses are provided in Appendix D. The final result of these models provided several interesting patterns. First, link strength did not significantly predict any of the target constructs when controlling for positively oriented link valence, job-related social support, and the other covariates. One possible explanation for this is that link strength acts as a moderator to positively oriented link valence and only has an impact at certain levels of link strength. This idea is further explored in a later section discussing Research Question 1.

A second interesting pattern showed that, while adding both positively oriented link valence and job-related social support resulted in significant changes in R^2 for job-satisfaction and turnover intent, there were notable differences across the other constructs. Job-related social support resulted in significant changes in R^2 for organizational commitment ($R^2 = .45$, $\Delta R^2 = .04$), engagement ($R^2 = .64$, $\Delta R^2 = .01$), and job-embeddedness ($R^2 = .41$, $\Delta R^2 = .04$), whereas positively oriented link valence did not. However, positively oriented link valence did account for significant changes in R^2 for the remaining constructs, person-organization fit ($R^2 = .27$, $\Delta R^2 = .03$), CWB likelihood ($R^2 = .37$, $\Delta R^2 = .04$), and self-efficacy ($R^2 = .27$, $\Delta R^2 = .02$), whereas job-related social support did not. While most of these changes in R^2 are quite small in terms of magnitude, it should be noted that both job-related social support and positively oriented link valence are added into the model after controlling for all other covariates and thus these results still have significant theoretical implications. The pattern of relationships found throughout these analyses demonstrate that positively oriented link valence and job-related social support do, in fact, measure both similar yet distinct qualities of links.

A final interesting pattern of results appears when examining positive and negative affect throughout the analyses. In all of the hierarchical regression analyses, adding either one, or both positive and negative affect, resulted in significant ($p < .01$) changes in R^2. This provides support for earlier assumptions that affect was attenuating the relationships between both link strength and positively oriented link valence with the other target constructs. However, unlike with job-related social support, there is not a clear connection between affect and its influence over link strength and valence. Although not possible with the present limited set of data, the best way to distinguish between these constructs would likely be exploratory structural equation modeling (ESEM), a recent development by Asparouhov and Muthén (2009) that creates an inclusive framework combining confirmatory factor analysis (CFA), exploratory factor analysis (EFA), and structural equation modeling (SEM) into a singular model. This approach allows one to conduct CFA, while also investigating how items associated with one factor could potentially cross-load onto or influence other factors. Thus, these analyses involve comparing series of increasingly complex and more fully specified measurement models that ultimately allow one to determine the relevant factors in a model (Asparouhov & Muthén, 2009).

Revisiting Self-Efficacy as Potential Evidence for Discriminant Validity

It is also important to discuss the signficant observed correlations between self-efficacy, and link strength and positively oriented link valence. Self-efficacy was included in the study as a possible construct that could demonstrate evidence for discriminant validity. The reasoning behind this was focused on the self-centered nature of self-efficacy (Bandura, 1977) as well as the relative stability that had been demonstrated in response to negative feedback (Miyake, 2000). However, it is possible that self-efficacy could influence how links are formed and

maintained. After all, self-efficacy is an integral part of someone's self-concept, and it requires confidence at some level in one's interpersonal skills to form or maintain a link with another individual. Therefore, it is possible that self-efficacy is a necessary component in forming and/or maintaining new links, even if at a very small level. This could explain the small, significant correlations found in the analyses between both link strength and positively oriented link valence with self-efficacy. Based on the results of the present study, it is unlikely that self-efficacy can be used as evidence for discriminant validity for link strength and positively oriented link valence.

Link Strength as a Potential Moderating Variable to Positively Oriented Link Valence

The analysis pertaining to the research question in the present study also yielded interesting results. Although the observed interaction effect was small and not at a magnitude to reach statistical significance ($b = -0.0064$, $p = .0638$), further examination of this effect at different levels of the moderator suggests that this effect may exist. There is certainly sufficient evidence here of an effect worth further study, as respondents to the present study with links with low levels of strength were potentially more likely to commit CWBs at high levels of positively oriented link valence than people who reported medium or high levels of link strength. This effect is illustrated in Figure 3, where it seems that the small effect and lack of significance can likely be attributed to a lack of statistical power. Although the axis scales have been adjusted to magnify this small effect for visibility, it is interesting to note here that different levels of link strength likely moderate the relationship between CWB likelihood and positively oriented link valence. This observed effect suggests that it is important to account for possible moderation effects when examining the relationship between link strength and positively oriented link valence. Given the exploratory nature of this research question, however, further considering of

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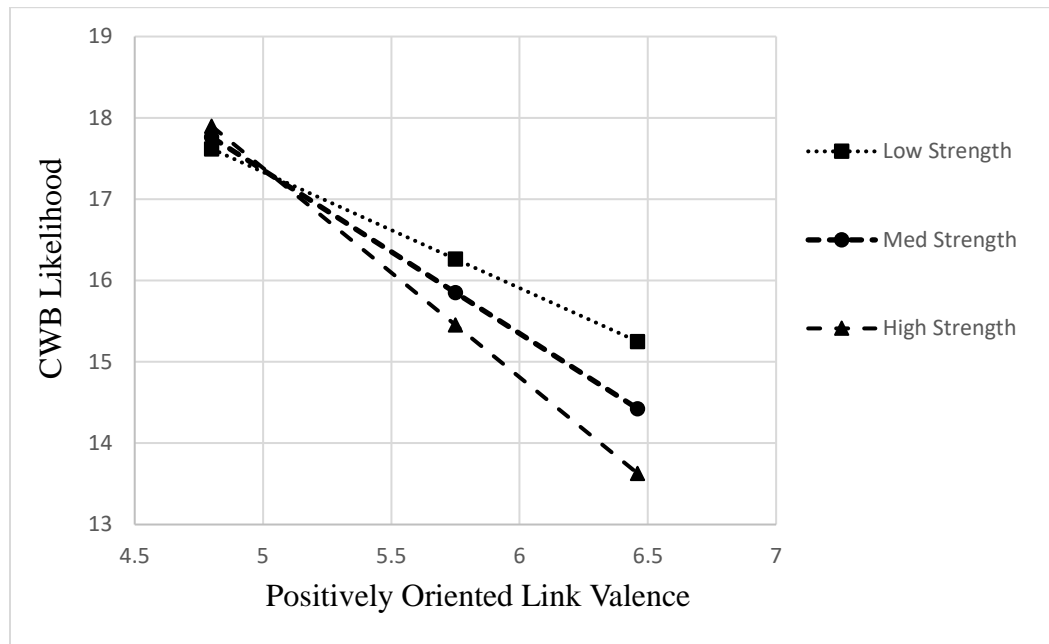this effect is warranted.

Figure 3   Magnified interaction effect across different levels of link strength (legend labels refer
            to different magnitudes of link strength)

Limitations and Directions for Future Research

There were several limitations on the current study, first and foremost being a lack of statistical power to use more robust analyses in hypotheses testing. This limitation was driven primarily by the smaller than desired final sample size. As discussed in the previous section, ideally one would employ ESEM or other more advanced analytical techniques to most appropriately analyze this data.

A second limitation is that there are no empirically tested measures available that operationalize link strength and positively oriented link valence. Thus, the measures used in the current study were developed by the researchers and have not been validated against some form

of more established criterion. However, it is important to note that in the I-O literature, social support has essentially been used as a measure of the quality and depths of one's personal links. Considering that link strength and positively oriented link valence correlated moderately with social support, likely measuring some similar qualities of links, this could be interpreted as a form of evidence for construct validation for link strength and positively oriented link valence. That is, the measures for link strength and positively oriented link valence used in the present study likely measured some of the same qualities as social support, a construct that has historically been used to describe links.

Finally, industry-type was not included as a potential covariate. Thus, there was no controlling for jobs that involved working with others in close quarters verses telework or other more physically isolated types of work. It is quite possible that there are many interesting effects dependent on the type of job and should be explored in future research.

That being said, this study was exploratory and was intended to set the stage for additional studies. Thus, there are a number of areas that should be explored for future research, first and foremost being a revision of the present study with appropriate statistical power that more distinctly operationalizes link strength and valence from job-related social support and positive affect. That is, before attempting to integrate social support as a facet of link-strength and positively oriented link valence, it is important to understand the unique contributions of each while controlling for the influence of positive affect.

In line with this research, it is important that a measure for link strength and positively oriented link valence is developed and validated. In the present study, link strength was operationalized as a function of link importance (i.e., how important a link is to maintaining or improving one's social and professional needs) and link frequency (i.e., how often one interacts

with a link), while positively oriented link valence was operationalized as the positive nature of a link (i.e., as a person, how much one likes a link). While it is clear from both the I-O and social network analysis literature that these are the important dimensions of link strength and positively oriented link valence to focus on, there are potentially better ways to measure these dimensions; future researchers are encouraged to consider creative and alternative measurement approaches to examine these qualities of links at work.

A second avenue for future research follows the results from Research Question 1. It would be interesting to see whether link strength moderates the relationship between positively oriented link valence and other constructs. If link strength moderates more than just the relationship with CWB likelihood, then it would point to another layer of complexity necessary to be accounted for when mapping out the latent construct behind link strength and positively oriented link valence. That is, some relationships may only surface at certain levels of link strength. Thus, thorough theoretical and empirical research is necessary to better understand when, and to what extent, link strength and positively oriented link valence interact.

Implications and Conclusions

Despite the limitations, the present study provides preliminary support for the idea that there is more to be learned about links at work if we expand the ways in which we study them. Specifically, evidence points toward link strength and positively oriented link valence as unique dimensions of links that should be further explored. Given the pattern of relationships demonstrated throughout the results, as well as the breadth of theoretical support, it seems likely that there are many benefits in promoting strong, positive links at work.

From theory, we know that promoting strong, positive links lead to more effective communication and wellbeing (Everett & Borgatti, 2014; Rook, 1984). In the present study, positively oriented link valence and link strength demonstrated moderate, positive correlations with job satisfaction, engagement, organizational commitment, and job-embeddedness, and moderate, negative correlations with CWB likelihood and turnover intents. Thus, there are likely many benefits for organizations that actively work to prevent negative links and promote strong, positive links at work. If these results are replicated, and the latent construct more clearly defined, then this research provides a foundational block in reevaluating decades of research studying interpersonal links at work. Therefore, given the widespread use and importance of links in I-O psychology research, it is imperative that further theoretical and empirical research is conducted to more clearly define the latent construct behind link strength and link valence.

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APPENDIX A

ANNOTATED COPY OF THE SURVEY USED IN THE PRESENT STUDY

Q1 **PLEASE REVIEW THE FOLLOWING INFORMATION CAREFULLY SO YOU CAN PROVIDE INFORMED CONSENT TO PARTICIPATE IN THIS RESEARCH**

Purpose of the study: This study is being conducted by Jared Dirghalli, a graduate student in the Industrial and Organizational Psychology program at The University of Tennessee at Chattanooga. This research is being conducted under the supervision of Dr. Chris Cunningham. Please note that participants in this study must be at least 18 years of age, currently work at least part-time in the United States, be able to read and write in English, and have worked at least 6 months in their current organization. The purpose of this survey is to examine how relationships between employees at work influence the workplace experience.

What will be done: If you agree to participate you will be asked to respond to a brief internet-based survey (requiring less than 30 minutes of your time). This survey includes questions about your workplace experience, job demands, and resources. Several demographic questions are also included so that the characteristics of the final sample can be accurately described.

Benefits of this study: You will be contributing to a body of research in the Industrial-Organizational Psychology literature, and helping researchers to understand how differences in workplace relationships can affect employees' workplace experience. Additionally, at the end of the survey, you will be entered into a drawing for a chance to win one of 15 $50 Visa gift cards (please note that completion of the survey is not a prerequisite to entering the drawing).

What are the risks to me? The risks of this study are limited to the potential inconvenience of taking the survey. If you feel uncomfortable with a question in the survey, you can skip it. You can also withdraw from the study at any time.

What about my privacy? Your participation in this research will be kept strictly confidential. All data you provide through this survey will be securely gathered and stored in encrypted and password protected files accessible only by the researchers listed below. No names or identifying information will ever be shared with other persons not involved with this research.

 Voluntary participation: It is your choice to participate in this research and you may withdraw from this study at any time. If you decide to quit before you have finished the survey, however, your answers will NOT be recorded. Because we can only make use of fully complete surveys, we greatly appreciate your full participation.

How will the data be used? The results of the study will be used for research purposes only. Group-level (not personally identified) results from the study will be presented in educational settings and at professional conferences, and the results may be published in a professional journal in the field of psychology.

Contact information: If you have concerns or questions about this study, please contact the chair of UTC's Institutional Review Board, Dr. Amy Doolittle, at amy-doolittle@utc.edu or 423-425-5563 or the faculty supervisor for this study, Dr. Chris Cunningham, at chris-cunningham@utc.edu or 423-425-4264. By opting to continue and complete this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.   Thank you in advance for your assistance and participation.   Sincerely, Jared Dirghalli and Chris Cunningham, Ph.D. Department of Psychology The University of Tennessee at Chattanooga   *The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149)   has approved this research project # 17-177.*

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Q2 I have read the preceding information and am willing to participate fully in this research.

◯ Yes (1)

◯ No (2)

Start of Block: Drawing interest Non-Eligible

Q3 Thank you for your time. Based on your answers to the previous questions, you do not meet the criteria to participate in this study. However, you are still eligible to be entered into the drawing for one of 15, $50 Visa gift cards.

Q4 Are you interested in entering the drawing for one of 15, $50 Visa gift cards?

◯ Yes (1)

◯ No (2)

End of Block: Drawing interest Non-Eligible

Start of Block: Drawing Entry - non participants

Q5 Even though you are not able to participate in this research, if you would like to enter into the drawing for one of 15 $50.00 Visa gift cards, please provide an email address in the box below. Winners will be contacted *after* data collection for this research is complete. You will only be contacted if you win the drawing. All email addresses will be deleted upon completion of the drawing. *Please enter the full address (Example: jon-smith@gmail.com)*

_____

Q6 How old are you? *Please enter using only the number of years (e.g., 47)*

_____

Q7 Do you currently work within the United States of America?

○ Yes (1)

○ No (2)

Q8 Have you worked at least 6 months at your current organization?

○ Yes (1)

○ No (2)

Q9 Are you able to comfortably read and write in English?

○ Yes (1)

○ No (2)

Q10 **The following questions deal with the people you interact with at work. Please answer as honestly and accurately as possible.**

Q11 Think back on your last seven days of work - with approximately how many employees of your organization did you interact over this time at work? *Please put only the number in the box (Example: 25). If you did not interact with any other employees at work over the last seven days, please put 0 in the box.*

_____

Q12 **Considering all of the employees with whom you interacted over the past seven days at work, what percentage of those employees would you say match each of the following descriptions?**

Click and drag the bars below to indicate your responses

	0 10 20 30 40 50 60 70 80 90 100
A supportive coworker with whom you frequently interact nearly every day. (1)	
A coworker you dislike and/or would rather avoid with whom you infrequently interact (i.e., once a week/month). (2)	
A supportive coworker with whom you infrequently interact (i.e., once a week/month). (3)	
A coworker you dislike and/or would rather avoid with whom you frequently interact nearly every day (4)	

Q13 **The following questions explore your relationships with people at work. Please answer as honestly and completely as possible.**

Q14 **Consider all of the people with whom you interacted at work in the last seven days. In the spaces provided below, identify up to 10 of these individuals who come to mind using a partial name, nickname, or initials for each person.**

○ Person 1 (1) _____

○ Person 2 (2) _____

○ Person 3 (3) _____

○ Person 4 (4) _____

○ Person 5 (5) _____

○ Person 6 (6) _____

○ Person 7 (7) _____

○ Person 8 (8) _____

○ Person 9 (9) _____

○ Person 10 (10) _____

Page Break ——

Q15 **The following questions are based on the individuals you listed in the previous question. Please respond as honestly and completely as possible.**

Q16 Considering both your general social and work-related needs, how important is your relationship to $Q14/ChoiceTextEntryValue/1? *Click and drag the bar below to indicate your response (0=not at all important and 100=very important).*

	Not at all important	Very important
	0 10 20 30 40 50 60 70 80 90 100	
(1)	████████████████████████████████	

Q17 How often do you interact with $Q14/ChoiceTextEntryValue/1 at work?

○ Never (1)

○ Almost Never (2)

○ Sometimes (3)

○ Almost Every Day (4)

○ Every Day (5)

Q18 As a person, how much do you like $Q14/ChoiceTextEntryValue/1?

○ Dislike strongly (1)

○ Dislike moderately (2)

○ Dislike slightly (3)

○ Neutral (4)

○ Like slightly (5)

○ Like moderately (6)

○ Like strongly (7)

Page Break ——

End of Block: Link Type Meaningfulness

Start of Block: Self-Efficacy

Q55 **The following statements address your ability to complete tasks at work with the tools and resources provided to you by your organization. Please read each statement carefully, and indicate your level of agreement to the following statements using a scale from "Disagree strongly" to "Agree strongly"**

Q56 I will be able to achieve most of the goals that I have set for myself.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q57 When facing difficult tasks, I am certain that I will accomplish them.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q58 In general, I think that I can obtain outcomes that are important to me.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q59 I believe I can succeed at most any endeavor to which I set my mind.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q60 I will be able to successfully overcome many challenges.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q61 I am confident that I can perform effectively on many different tasks.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q62 Compared to other people, I can do most tasks very well.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Q63 Even when things are tough, I can perform   quite well.

○ Disagree strongly (1)

○ Disagree moderately (2)

○ Disagree slightly (3)

○ Neutral (4)

○ Agree slightly (5)

○ Agree moderately (6)

○ Agree strongly (7)

Page Break

Q64 **Think of your job in general. All in all, what is it like most of the time? In the spaces beside each word or phrase below, select one of the following: "Yes" if it describes your job, "No" if it does not describe your job, and "Cannot Decide" if you are unsure.**

Q65

	No (1)	Cannot Decide (2)	Yes (3)
Good (1)	○	○	○
Undesirable (2)	○	○	○
Better than Most (3)	○	○	○
Disagreeable (4)	○	○	○
Makes me content (5)	○	○	○
Excellent (6)	○	○	○
Enjoyable (7)	○	○	○
Poor (8)	○	○	○

Page Break

Q66 **The following questions address how you feel about your current organization. Please read each statement carefully, and respond as honestly and completely as possible using a scale from "Not at all" to "Extremely"**

Q67 How committed are you to your organization?

○ Not at All (1)

○ Very Little (2)

○ Somewhat (3)

○ Neutral (4)

○ Moderately (5)

○ Quite a Bit (6)

○ Extremely (7)

Q68 To what extent do you care about your organization?

○ Not at All (1)

○ Very Little (2)

○ Somewhat (3)

63

○ Neutral (4)

○ Moderately (5)

○ Quite a Bit (6)

○ Extremely (7)

Q69 How dedicated are you to your organization?

○ Not at All (1)

○ Very Little (2)

○ Somewhat (3)

○ Neutral (4)

○ Moderately (5)

○ Quite a Bit (6)

○ Extremely (7)

Q70 To what extent have you chosen to be committed to your organization?

○ Not at All (1)

○ Very Little (2)

◯ Somewhat (3)

◯ Neutral (4)

◯ Moderately (5)

◯ Quite a Bit (6)

◯ Extremely (7)

Page Break

Q71
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, select the "Never" option. If you have had this feeling, indicate how often you feel it by selecting the response option that best describes how frequently you feel that way

Q72	Never (1)	A Few Times a Year or Less (2)	Once a Month or Less (3)	A Few Times a Month (4)	Once a Week (5)	A Few Times a Week (6)	Every Day (7)
At my work, I feel bursting with energy. (1)	○	○	○	○	○	○	○
At my job, I feel strong and vigorous. (2)	○	○	○	○	○	○	○
I am enthusiastic about my job. (3)	○	○	○	○	○	○	○
My job inspires me. (4)	○	○	○	○	○	○	○
When I get up in the morning, I feel like going to work. (5)	○	○	○	○	○	○	○
I feel happy when I am working intensely. (6)	○	○	○	○	○	○	○
I am proud of the work that I do. (7)	○	○	○	○	○	○	○
I am immersed in my work. (8)	○	○	○	○	○	○	○
I get carried away when I'm working. (9)	○	○	○	○	○	○	○

Q73 **Considering how you currently feel about your job, please respond to the following statements indicating the level of fit you feel with your job and organization as a whole using a scale from "Disagree strongly" to "Agree strongly"**

Q74
The things that I value in life are very similar to the things that my organization values.

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neither agree or disagree (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q75
My personal values match my organization's values and culture.

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neither agree or disagree (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q76
My organization's values and culture provide a good fit with the things that I value in life.

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neither agree or disagree (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q77 **After considering both work-related factors (such as relationships, fit with job, benefits) and nonwork-related factors (such as neighbors, hobbies, community perks), please rate your agreement with the statements below**

Q78
I feel attached to this organization

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

70

Q79
It would be difficult for me to leave this organization

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q80
I'm too caught up in this organization to leave

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q81
I feel tied to this organization

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q82
I simply could not leave the organization that I work for

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q83
It would be easy for me to leave this organization

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Q84
I am tightly connected to this organization

○ Disagree strongly (1)

○ Disagree (2)

○ Disagree somewhat (3)

○ Neutral (4)

○ Agree somewhat (5)

○ Agree (6)

○ Agree strongly (7)

Page Break

Q85 **The following 6 questions are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. Indicate how often you feel this way by selecting the response option that best describes how frequently you feel that way**

Q86
How often do you dream about getting another job that will better suit your personal needs?

○ Never (1)

○ Rarely (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q87
How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?

○ Never (1)

○ Rarely (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q88
How often have you considered leaving your job?

○ Never (1)

○ Rarely (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q89
How likely are you to accept another job at the same compensation level should it be offered to you?

○ Never (1)

○ Rarely (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q90
To what extent is your current job satisfying your personal needs?

◯ Never (1)

◯ Rarely (2)

◯ Sometimes (3)

◯ Often (4)

◯ Always (5)

Q91
How often do you look forward to another day at work?

◯ Never (1)

◯ Rarely (2)

◯ Sometimes (3)

◯ Often (4)

◯ Always (5)

Page Break

End of Block: Turnover Intent

Start of Block: Counterproductive Work Behaviors

Q92 **The following questions are about your behaviors at work. Please read each statement carefully and respond as honestly and completely as possible.**

Q93 How often have you done each of the following things on your present job?

	Never (1)	Once or Twice (2)	Once or Twice per Month (3)	Once or Twice per Week (4)	Every Day (5)
Purposely wasted your employer's materials/supplies (1)	○	○	○	○	○
Complained about insignificant things at work (2)	○	○	○	○	○
Told people outside the job what a lousy place you work for (3)	○	○	○	○	○
Came to work late without permission (4)	○	○	○	○	○
Stayed home from work and said you were sick when you weren't (5)	○	○	○	○	○
Insulted someone about their job performance (6)	○	○	○	○	○
Made fun of someone's personal life (7)	○	○	○	○	○
Ignored someone at work (8)	○	○	○	○	○
Started an argument with someone at work (9)	○	○	○	○	○
Insulted or made fun of someone at work (10)	○	○	○	○	○

Q94 The following statements are about the emotions you experience at work. Please read each statement carefully and respond as honestly as possible using a scale from "Never" to "Always"

Q95 Thinking about yourself and how you normally feel at work, to what extent do you feel:

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
Upset (1)	○	○	○	○	○
Hostile (2)	○	○	○	○	○
Alert (3)	○	○	○	○	○
Ashamed (4)	○	○	○	○	○
Inspired (5)	○	○	○	○	○
Nervous (6)	○	○	○	○	○
Determined (7)	○	○	○	○	○
Attentive (8)	○	○	○	○	○
Afraid (9)	○	○	○	○	○
Active (10)	○	○	○	○	○

Page Break ——————————————————————————————

Q96 **Please use the below list of common human traits to describe yourself as accurately as possible. Describe yourself as you *really are* compared to other people you know of the same age and sex, not as you wish to be. So, generally, is it accurate or inaccurate that you are:**

Q97	Completely Inaccurate (1)	Moderately Inaccurate (2)	Neither Inaccurate, nor Accurate (3)	Moderately Accurate (4)	Completely Accurate (5)
Shy (1)	○	○	○	○	○
Talkative (2)	○	○	○	○	○
Energetic (3)	○	○	○	○	○
Quiet (4)	○	○	○	○	○
Extraverted (5)	○	○	○	○	○
Outgoing (6)	○	○	○	○	○
Reserved (7)	○	○	○	○	○
Untalkative (8)	○	○	○	○	○
Creative (9)	○	○	○	○	○
Intellectual (10)	○	○	○	○	○
Unimaginative (11)	○	○	○	○	○
Artistic (12)	○	○	○	○	○
Intelligent (13)	○	○	○	○	○
Philosophical (14)	○	○	○	○	○

Deep (15)	○	○	○	○	○
Uncreative (16)	○	○	○	○	○
Envious (17)	○	○	○	○	○
Emotional (18)	○	○	○	○	○
Anxious (19)	○	○	○	○	○
Unworried (20)	○	○	○	○	○
Jealous (21)	○	○	○	○	○
Unenvious (22)	○	○	○	○	○
Moody (23)	○	○	○	○	○
Unanxious (24)	○	○	○	○	○
Efficient (25)	○	○	○	○	○
Disorganized (26)	○	○	○	○	○

Careless (27)	○	○	○	○	○
Untidy (28)	○	○	○	○	○
Neat (29)	○	○	○	○	○
Inefficient (30)	○	○	○	○	○
Systematic (31)	○	○	○	○	○
Organized (32)	○	○	○	○	○
Kind (33)	○	○	○	○	○
Sympathetic (34)	○	○	○	○	○
Harsh (35)	○	○	○	○	○
Cooperative (36)	○	○	○	○	○
Unkind (37)	○	○	○	○	○
Warm (38)	○	○	○	○	○
Rude (39)	○	○	○	○	○
Inconsiderate (40)	○	○	○	○	○

Page Break

Q98 **The following questions are about the support you have *outside of work*. Please read each question carefully and respond as honestly as possible.**

Q99 If you needed it, how often is someone available *outside of work*…

	None of the Time (1)	A Little of the Time (2)	Some of the Time (3)	Most of the Time (4)	All of the Time (5)
To help you if you were confined to bed? (1)	○	○	○	○	○
To take you to the doctor if you need it? (2)	○	○	○	○	○
To prepare your meals if you are unable to do it yourself? (3)	○	○	○	○	○
To help with daily chores if you were sick? (4)	○	○	○	○	○
To have a good time with? (5)	○	○	○	○	○
To turn to for suggestions about how to deal with a personal problem? (6)	○	○	○	○	○
Who understands your problems? (7)	○	○	○	○	○
To love and make you feel wanted? (8)	○	○	○	○	○

Q100 **The following questions are about the support you have *at work.* Please read each statement and respond as honestly as possible**

Q101
Can you rely upon your immediate supervisor when things get tough *at work*?

○ Not Applicable (1)

○ Never (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q102
If necessary, can you ask your immediate supervisor for help?

○ Not Applicable (1)

○ Never (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q103
Can you rely upon your co-workers when things get tough at work?

○ Not Applicable (1)

○ Never (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Q104
If necessary, can you ask your co-workers for help?

○ Not Applicable (1)

○ Never (2)

○ Sometimes (3)

○ Often (4)

○ Always (5)

Page Break

Q105 **Please respond to the following questions as honestly and completely as possible.**

Q106
Please indicate the number of prior jobs you have held in the last five years. *Type only the number into box (Example: 4)*

_____

Q107 In years, how long have you worked for your current organization? *Type only the number into box (Example: 4.5)*

_____

Q108 Estimate roughly how many employees work at your organization. If your organization has multiple locations, please estimate the number of employees working at your current location. *Type only the number into box (Example: 150)*

_____

Q109 How many hours do you work in a typical work week? *Type only the number into box (Example: 40)*

_____

Q110 What is your current marital status?

○ Single (1)

○ Married (2)

○ Divorced (3)

○ Widowed (4)

○ Separated (5)

Q111 What is the highest level of education you have completed?

○ Some high school (1)

○ High school diploma or GED (2)

○ Some college (3)

○ Associate's degree (4)

○ Bachelor's degree (5)

○ Some graduate school (6)

○ Master's degree (7)

○ Ph.D. (8)

Q112 How many dependents do you have (include youth or dependent adults)? *Type only the number into the box (Example: 4). If you have none, type 0 into the box.*

_____

Q113 Please select the gender you most closely identify with. If you choose, "Other" please provide the gender you identify with.

○ Male (1)

○ Female (2)

○ Prefer not to Identify (4)

○ Other (3)

Q114 Please provide the gender you identify as:

_____

Q115 Please select the ethnicity you most closely identify with. If you choose "Other" please provide the ethnicity you identify with.

○ Hispanic/Latino (1)

○ White (2)

○ African American/Black (3)

○ Asian (4)

○ Arab Americans (5)

○ Native American/Alaskan Native (6)

○ Native Hawaiian/Pacific Islander (7)

○ Multi-Racial (8)

○ Other (9)

○ Prefer not to Identify (10)

Q116 Please provide the ethnicity you most identify with:

_____

End of Block: Demographics

Start of Block: Drawing Entry Interest

Q117 Are you interested in entering the drawing for one of 15, $50 Visa gift cards?

○ Yes (1)

○ No (2)

End of Block: Drawing Entry Interest

Start of Block: Drawing Entry Participants

Q118 Thank you for participating in this research. To enter into the drawing for one of 15 $50.00 Visa gift cards, please provide an email address in the box below. Winners will be contacted *after* all participants have completed the survey, and you will only be contacted if you win the drawing. All email addresses will be deleted upon completion of the drawing. *Please enter the full email address (Example: john-smith@gmail.com)*

_____

End of Block: Drawing Entry Participants

Start of Block: Participant Pool

Q119 From time to time we conduct studies like the one you just completed. These studies are used in our efforts to better understand employees and organizations, and to help guide research and practice that can improve the quality of our work experiences. Would you be interested in being contacted with the opportunity to participate in future studies like this one?

○ Yes (1)

○ No (2)

Q120 Please enter your preferred email address. Your information will only be used to contact you for future studies similar to the one you just completed. This information will not be shared with anyone outside the research team managing this project. You are also free to remove yourself from this list at any time. *Please enter your full email address (Example: john-smith@gmail.com)*

_____

End of Block: Participant Pool

APPENDIX B

IRB APPROVAL LETTER

MEMORANDUM

TO: Jared Matthew Dirghalli   **IRB # 17-177**
                  Dr. Chris Cunningham

FROM: Lindsay Pardue, Director of Research Integrity
                  Dr. Amy Doolittle, IRB Committee Chair

DATE: 11/21/17

SUBJECT: IRB #17-177: Quantifying and Qualifying the Links that Bind

The IRB Committee Chair has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 17-177.

Annual Renewal. All approved research is subject to UTC IRB review, at least once a year. Please visit our website (http://www.utc.edu/research-integrity/institutional-review-board/forms.php) for the Form B (continuation / change / completion form) that you will need to complete and submit if your project remains active and UTC IRB approval needs to be renewed for another year. Unless your research moves in a new direction or participants have experienced adverse reactions, then renewal is not a major hurdle. You as Principal Investigator are responsible for turning in the Form B on time (2 weeks before one year from now), and for determining whether any changes will affect the current status of the project. When you complete your research, the same change/completion form should be completed indicating project termination. This will allow UTC's Office of Research Integrity to close your project file.

Please remember to contact the IRB immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu.

Best wishes for a successful research project.

APPENDIX C

ALTERNATIVE COCOR ANALYSES FOR HYPOTHESIS 3

Table 8   COCOR Analysis Comparing Correlation Magnitudes for Link Strength

cocor - comparing correlations, 1.1-3, http://comparingcorrelations.org
INPUT: LINK STRENGTH
require(cocor) # load package
cocor.dep.groups.overlap(r.jk=+0.31, r.jh=+0.21, r.kh=+0.28, n=268, alternative="greater", alpha=0.05, conf.level=0.95, null.value=0)
OUTPUT:
Results of a comparison of two overlapping correlations based on dependent groups
Comparison between r.jk = 0.31 and r.jh = 0.21
Difference: r.jk - r.jh = 0.1
Related correlation: r.kh = 0.28
Group size: n = 268
Null hypothesis: r.jk is equal to r.jh
Alternative hypothesis: r.jk is greater than r.jh (one-sided)
Alpha: 0.05
pearson1898: Pearson and Filon's z (1898)
z = 1.4357, p-value = 0.0755
Null hypothesis retained
hotelling1940: Hotelling's t (1940)
t = 1.4400, df = 265, p-value = 0.0755
Null hypothesis retained
williams1959: Williams' t (1959)
t = 1.4291, df = 265, p-value = 0.0771
Null hypothesis retained
olkin1967: Olkin's z (1967)
z = 1.4357, p-value = 0.0755
Null hypothesis retained
dunn1969: Dunn and Clark's z (1969)
z = 1.4264, p-value = 0.0769
Null hypothesis retained

hendrickson1970: Hendrickson, Stanley, and Hills' (1970) modification of Williams' t (1959)
t = 1.4400, df = 265, p-value = 0.0755
Null hypothesis retained
steiger1980: Steiger's (1980) modification of Dunn and Clark's z (1969) using average correlations
z = 1.4252, p-value = 0.0770
Null hypothesis retained
meng1992: Meng, Rosenthal, and Rubin's z (1992)
z = 1.4241, p-value = 0.0772
Null hypothesis retained
95% confidence interval for r.jk - r.jh: -0.0404 0.2552
Null hypothesis retained (Lower boundary <= 0)
hittner2003: Hittner, May, and Silver's (2003) modification of Dunn and Clark's z (1969) using a backtransformed average Fisher's (1921) Z procedure
z = 1.4251, p-value = 0.0771
Null hypothesis retained
zou2007: Zou's (2007) confidence interval
95% confidence interval for r.jk - r.jh: -0.0374 0.2364
Null hypothesis retained (Lower boundary <= 0)
95% confidence interval for r.jk - r.jh: -0.0389 0.2322
Null hypothesis retained (Interval includes 0)

Table 9   COCOR Analysis Comparing Correlation Magnitudes for Positively Oriented Link
    Valence

cocor - comparing correlations, 1.1-3, http://comparingcorrelations.org
INPUT:
require(cocor) # load package
cocor.dep.groups.overlap(r.jk=+0.35, r.jh=+0.31, r.kh=+0.28, n=268, alternative="greater", alpha=0.05, conf.level=0.95, null.value=0)
OUTPUT:
Results of a comparison of two overlapping correlations based on dependent groups
Comparison between r.jk = 0.35 and r.jh = 0.31
Difference: r.jk - r.jh = 0.04
Related correlation: r.kh = 0.28
Group size: n = 268
Null hypothesis: r.jk is equal to r.jh
Alternative hypothesis: r.jk is greater than r.jh (one-sided)
Alpha: 0.05
pearson1898: Pearson and Filon's z (1898)
z = 0.5915, p-value = 0.2771
Null hypothesis retained
hotelling1940: Hotelling's t (1940)
t = 0.5961, df = 265, p-value = 0.2758
Null hypothesis retained
williams1959: Williams' t (1959)
t = 0.5883, df = 265, p-value = 0.2784
Null hypothesis retained
olkin1967: Olkin's z (1967)
z = 0.5915, p-value = 0.2771
Null hypothesis retained
dunn1969: Dunn and Clark's z (1969)
z = 0.5881, p-value = 0.2782
Null hypothesis retained

hendrickson1970: Hendrickson, Stanley, and Hills' (1970) modification of Williams' t (1959)
t = 0.5961, df = 265, p-value = 0.2758
Null hypothesis retained
steiger1980: Steiger's (1980) modification of Dunn and Clark's z (1969) using average correlations
z = 0.5880, p-value = 0.2783
Null hypothesis retained
meng1992: Meng, Rosenthal, and Rubin's z (1992)
z = 0.5880, p-value = 0.2783
Null hypothesis retained
95% confidence interval for r.jk - r.jh: -0.1048 0.1946
Null hypothesis retained (Lower boundary <= 0)
hittner2003: Hittner, May, and Silver's (2003) modification of Dunn and Clark's z (1969) using a backtransformed average Fisher's (1921) Z procedure
z = 0.5880, p-value = 0.2783
Null hypothesis retained
zou2007: Zou's (2007) confidence interval
95% confidence interval for r.jk - r.jh: -0.0931 0.1729
Null hypothesis retained (Lower boundary <= 0)

APPENDIX D

HIERARCHICAL REGRESSION ANALYSES REGRESSING TARGET CONSTRUCTS

ONTO JOB-RELATED SOCIAL SUPPORT, LINK STRENGTH, AND POSITIVELY

ORIENTED LINK VALENCE

Table 10   Summary of Hierarchical Regression Analysis for Variables Predicting Job Satisfaction

	Job Satisfaction							
			β					
Predictors	Step 1	Step 2		Step 3		Step 4	
Age	.07	-.01		-.04		.00	
Single	-.08	-.18	*	-.16	*	-.14	*
Female	.06	.06		.06		.04	
Majority vs. minority status	.06	.08		.08		.06	
Tencode (Tenure)	-.04	-.05		-.01		.00	
Number of prior jobs	-.03	.02		.04		.02	
Hours worked per week	-.07	-.01		-.02		-.02	
Education	.10	.09		.07		.05	
Number of dependents	.04	.02		.04		.02	
Negative affect		-.36	**	-.31	**	-.26	**
Positive affect		.46	**	.44	**	.37	**
Extraversion		.00		-.01		-.02	
Openness to experience		.00		.01		.00	
Emotional stability		.03		.01		-.01	
Conscientiousness		.01		.00		.00	
Agreeableness		-.02		-.08		-.08	
Link Strength				.05		.01	
Positively oriented link valence				.24	**	.16	**
Job-related social support						.25	**
ΔR^2	.04	.04		.06		.04	
ΔF	1.12	20.01	**	13.11	**	17.33	**
Adjusted R^2	.00	.35		.41		.45	
F	1.12	9.72	**	10.96	**	12.00	**

Note. $N = 259$; * $p < .05$; ** $p < .01$

Table 11   Summary of Hierarchical Regression Analysis for Variables Predicting Organizational Commitment

		Organizational Commitment						
				β				
Predictors		Step 1		Step 2		Step 3		Step 4
Age		.19 *		.13		.10		.14
Single		.02		-.06		-.05		-.03
Female		.16 *		.08		.10		.07
Majority vs. minority status		-.03		-.03		-.02		-.04
Tencode (Tenure)		-.09		-.09		-.06		-.06
Number of prior jobs		-.12		-.07		-.06		-.09
Hours worked per week		.08		.11		.09		.10
Education		-.11		-.12 *		-.13 *		-.15 *
Number of dependents		.03		.01		.02		.01
Negative affect				-.21 **		-.19 **		-.13 *
Positive affect				.44 **		.42 **		.34 **
Extraversion				.05		.04		.04
Openness to experience				.03		.03		.02
Emotional stability				.07		.06		.04
Conscientiousness				.06		.06		.05
Agreeableness				.08		.04		.05
Link Strength						.10		.05
Positively oriented link valence						.12 *		.04
Job-related social support								.27 **
	ΔR^2	.08		.34		.03		.04
	ΔF	2.52 **		20.04 **		6.31 **		20.11 **
	Adjusted R^2	.05		.38		.41		.45
	F	2.52 **		10.94 **		10.85 **		12.16 **

Note. $N = 260$; * $p < .05$; ** $p < .01$

Table 12   Summary of Hierarchical Regression Analysis for Variables Predicting Engagement

	Engagement							
				β				
Predictors	Step 1		Step 2		Step 3		Step 4	
Age	.17		.10		.08		.10	
Single	.10		.03		.04		.05	
Female	.15	*	.07		.07		.06	
Majority vs. minority status	.05		.05		.04		.04	
Tencode (Tenure)	-.13		-.14	**	-.12	**	-.11	*
Number of prior jobs	-.03		.05		.05		.04	
Hours worked per week	.13		.17	**	.17	**	.17	**
Education	.05		.02		.01		.00	
Number of dependents	.12		.10	*	.11	*	.10	*
Negative affect			-.20	**	-.18	**	-.15	**
Positive affect			.66	**	.65	**	.62	**
Extraversion			.02		.02		.01	
Openness to experience			.03		.03		.03	
Emotional stability			.05		.04		.04	
Conscientiousness			-.02		-.03		-.03	
Agreeableness			.11	*	.08	*	.08	*
Link Strength					.02		.00	
Positively oriented link valence					.12	**	.09	
Job-related social support							.12	*
ΔR^2	.09		.55		.02		.01	
ΔF	2.79	**	54.04	**	5.21	**	5.94	*
Adjusted R^2	.06		.62		.63		.64	
F	2.79	**	27.54	**	25.91	**	25.36	**

*Note. N = 260; * p < .05; ** p <.01*

Table 13 Summary of Hierarchical Regression Analysis for Variables Predicting
Person-Organization Fit

Person-Organization Fit							
		β					
Predictors	Step 1		Step 2		Step 3		Step 4	
Age	-.03		-.07		-.07		-.06	
Single	-.05		-.11		-.10		-.09	*
Female	.15	*	.11		.11		.10	
Majority vs. minority status	-.03		-.01		-.01		-.02	
Tencode (Tenure)	-.04		-.04		-.01		-.01	
Number of prior jobs	-.09		-.04		-.03		-.04	
Hours worked per week	.03		.07		.07		.07	
Education	.03		.01		-.01		-.02	
Number of dependents	-.08		-.10		-.09		-.09	
Negative affect			-.25	**	-.22	**	-.19	**
Positive affect			.35	**	.35	**	.32	**
Extraversion			-.07		-.08		-.08	
Openness to experience			.09		.09		.09	
Emotional stability			.03		.02		.01	
Conscientiousness			.01		.01		.01	
Agreeableness			.11		.08		.08	
Link Strength					-.02		-.04	
Positively oriented link valence					.19	**	.15	*
Job-related social support							.11	
ΔR^2	.03		.26		.03		.01	
ΔF	.97		12.71	**	4.97	**	2.66	**
Adjusted R^2	.00		.25		.27		.28	
F	.97		6.29	**	6.32	**	6.17	**

Note. $N = 260$; * $p < .05$; ** $p < .01$

Table 14   Summary of Hierarchical Regression Analysis for Variables Predicting
Job-Embeddedness

	Job-Embeddedness							
				β				
Predictors	Step 1		Step 2		Step 3		Step 4	
Age	.02		-.05		-.08		-.05	
Single	-.02		-.08		-.07		-.05	
Female	.14	*	.07		.08		.05	
Majority vs. minority status	.07		.06		.06		.04	
Tenure	.17	**	.16	**	.19	**	.20	*
Number of prior jobs	-.02		.04		.05		.03	
Hours worked per week	.06		.07		.06		.06	
Education	-.06		-.08		-.09		-.11	
Number of dependents	-.02		-.03		-.02		-.03	
Negative affect			-.11		-.08		-.02	
Positive affect			.47	**	.45	**	.37	**
Extraversion			.09		.07		.07	
Openness to experience			.08		.08		.07	
Emotional stability			.09		.08		.06	
Conscientiousness			.04		.03		.03	
Agreeableness			.03		-.02		-.01	
Link Strength					.08		.04	
Positively oriented link valence					.17	**	.09	
Job-related social support							.26	**
ΔR^2	.07		.30		.04		.04	
ΔF	2.00	*	16.69	**	8.21	**	17.17	**
Adjusted R^2	.03		.33		.37		.41	
F	2.00	*	8.92	**	9.31	**	10.32	**

Note. $N = 260$; * $p < .05$; ** $p < .01$

Table 15   Summary of Hierarchical Regression Analysis for Variables Predicting Turnover-Intent

| | Turnover-Intent | | | |
| | β | | | |
Predictors	Step 1	Step 2	Step 3	Step 4
Age	-.16	-.11	-.09	-.14 *
Single	-.06	.02	.00	-.03
Female	-.08	-.06	-.06	-.02
Majority vs. minority status	-.08	-.10 *	-.09 *	-.07
Tencode (Tenure)	.09	.10	.06	.05
Number of prior jobs	.00	-.05	-.07	-.03
Hours worked per week	.01	-.07	-.06	-.07
Education	-.05	-.03	-.01	.02
Number of dependents	-.03	.00	-.01	.01
Negative affect		.47 **	.43 **	.35 *
Positive affect		-.48 **	-.46 **	-.36 *
Extraversion		.04	.05	.06
Openness to experience		.03	.03	.05
Emotional stability		-.07	-.05	-.03
Conscientiousness		.07	.07	.07
Agreeableness		-.05	.00	-.01
Link Strength			-.02	.04
Positively oriented link valence			-.22 **	-.11 *
Job-related social support				-.36 **
ΔR^2	.03	.43	.04	.07
ΔF	.09	28.13 **	10.50 **	42.45 **
Adjusted R^2	-.01	.43	.47	.55
F	.87	13.17 **	13.78 **	17.54 **

Note. $N = 260$; * $p < .05$; ** $p < .01$

Table 16   Summary of Hierarchical Regression Analysis for Variables Predicting CWB Likelihood

Predictors		CWB Likelihood β						
		Step 1	Step 2		Step 3		Step 4	
Age		.03	.01		.03		.02	
Single		.08	.12		.10		.10	
Female		-.10	.01		.01		.01	
Majority vs. minority status		-.03	-.05		-.05		-.05	
Tencode (Tenure)		.18	.14	*	.10		.10	
Number of prior jobs		.01	-.02		-.04		-.04	
Hours worked per week		-.03	-.05		-.04		-.04	
Education		-.03	-.03		.00		.00	
Number of dependents		.05	.06		.05		.05	
Negative affect			.24	**	.20	**	.19	*
Positive affect			-.11		-.10		-.09	
Extraversion			.15		.16		.17	
Openness to experience			.01		.01		.01	
Emotional stability			-.01		.00		.00	
Conscientiousness			-.14	*	-.14	*	-.14	*
Agreeableness			-.38	**	-.33	**	-.33	**
Link Strength					.00		.00	
Positively oriented link valence					-.23	**	-.22	**
Job-related social support							-.02	
	ΔR^2	.04	.33		.04		.00	
	ΔF	1.17	17.99	**	9.11	**	.07	
	Adjusted R^2	.01	.33		.37		.37	
	F	1.17	8.84	**	9.39	**	8.87	**

Note. $N = 260$; * $p < .05$; ** $p < .01$

Table 17 Summary of Hierarchical Regression Analysis for Variables Predicting Self-Efficacy

Self-Efficacy							
			β				
Predictors	Step 1	Step 2		Step 3		Step 4	
Age	.07	.02		.01		.01	
Single	.09	.01	*	.02	*	.03	*
Female	.06	.09		.10		.10	
Majority vs. minority status	-.03	.02		.01		.01	
Tencode (Tenure)	.05	.04		.07		.07	
Number of prior jobs	-.06	-.02		-.01		-.01	
Hours worked per week	-.11	-.07		-.08		-.08	
Education	.16	.13		.11		.11	
Number of dependents	.09	.07		.08		.07	
Negative affect		-.27	**	-.24	**	-.24	**
Positive affect		.28	**	.27	**	.27	**
Extraversion		-.01		-.02		-.02	
Openness to experience		.14	*	.14	*	.14	*
Emotional stability		-.13	*	-.14	*	-.14	*
Conscientiousness		-.02		-.02		-.02	
Agreeableness		.00		-.04		-.04	
Link Strength				.02		.02	
Positively oriented link valence				.15	*	.15	*
Job-related social support						.03	
ΔR^2	.04	.25		.02		.00	
ΔF	1.17	12.41	**	4.15	*	.15	
Adjusted R^2	.01	.25		.27		.26	
F	1.17	6.30	**	6.21	**	5.87	**

*Note. N = 260; * p < .05; ** p <.01*

VITA

Jared Dirghalli was born in Jacksonville, FL, to Susan and Michael Dirghalli. He has two brothers, Jacob and Justin. He attended St. Andrews Episcopal Day School and completed his high school education at Providence School of Jacksonville in Jacksonville, Florida. After graduation, Jared attended Florida State University where he became interested in Psychology and the study of human behavior. After completing his bachelors in August 2014, he worked for nearly three years as a project coordinator in a cognitive psychology lab focused on transportation safety for an aging population. The scientific curiosity and enthusiasm of the team, mixed with the challenging workload, became the impetus for him to pursue further education and training. In Fall of 2016, Jared began attending the University of Tennessee at Chattanooga's Industrial-Organizational psychology program. He currently works as a graduate assistant under the Dean of Students' Office's Alcohol and Other Drugs program. Jared is graduating with his Master of Science degree in Industrial-Organizational Psychology in May 2018 and is currently pursuing a job in research and data-analytics focused on improving occupational health and safety.