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ROLE STRESSORS, COWORKER SUPPORT, AND WORK ENGAGEMENT: A LONGITUDINAL STUDY

A Thesis

Presented to

The Faculty of the Department of Psychology

San José State University

In Partial Fulfillment

of the requirements for the Degree

Master of Science

by

Jerry Wright

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The Designated Thesis Committee Approves the Thesis Titled

ROLE STRESSORS, COWORKER SUPPORT, AND WORK ENGAGEMENT: A LONGITUDINAL STUDY

by

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APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

SAN JOSÉ STATE UNIVERSITY

December 2009

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ABSTRACT

ROLE STRESSORS, COWORKER SUPPORT, AND WORK ENGAGEMENT: A LONGITUDINAL STUDY

By Jerry Wright

This study examined the Job Demands-Resources theory in relation to engagement using a longitudinal design. The main purpose of this longitudinal study was to investigate the nature of work engagement over time. Specifically, it examined if role stressors (a job demand) were predictive of work engagement measured one year later. Additionally, this study investigated the possible moderating or buffering effect of coworker support (a job resource) on the relationship between role stressors and later work engagement.

A total of 96 (70% full-time and 30% part-time) library employees participated in this study. A moderated hierarchical regression analysis indicated that baseline engagement was a strong predictor of later engagement. Engagement was relatively stable over one year. The analyses also showed that initial role stressors were not related to engagement measured one year later, but that there was a moderated effect of coworker support on the relationship between initial role ambiguity and engagement measured one year later. In cases of low role ambiguity, high coworker support led to lower work engagement. In cases of high role ambiguity, coworker support made little difference. There was no statistically significant relationship between role conflict and later engagement. The implications of this study are discussed.

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TABLE OF CONTENTS

SECTION PAGE

List of Tables and Figures ix

Introduction 1

- Positive Psychology Perspective 2
- Work Engagement 4
  - Kahn's conceptualization 4
  - Rothbard's conceptualization 5
  - Steele and Fullagar's conceptualization 5
  - Macey and Schneider's conceptualization 5
  - Britt's conceptualization 6
  - Gallup's conceptualization 7
  - Maslach and Leiter's conceptualization 8
  - Schaufeli and colleagues' conceptualization 10
  - Rationale for using Schaufeli's conceptualization 13
- Outcomes of Work Engagement 14
  - Performance 14
  - Intent to quit/turnover 15
  - Satisfaction 15
  - Proactive behaviors 16
  - Health issues 16
- Antecedents of Engagement and the Job Demands – Resources Model 17

        - JD-R and antecedents of burnout 19
        - JD-R and engagement 19
    - Role Stressors as Job Demands 24
        - Outcomes of role stressors 25
    - Coworker Support/Social Support as a Job Resource 27
        - Outcomes of coworker support 27
        - Coworker support and engagement 29
    - Longitudinal Studies of Engagement 30
    - Hypotheses 33
- Method 36
    - Participants 36
    - Measures 36
        - Role stressors 36
        - Coworker support 37
        - Work engagement 38
    - Procedure 38
- Results 41
    - Factor Analysis 41
    - Descriptive Statistics 50
        - Pearson correlation coefficients 50
    - Hierarchical Moderated Multiple Regression 51
        - Hierarchical regression of role conflict and coworker support 52

Hierarchical regression of role ambiguity and coworker support..............53

Discussion..58

Limitations and Future Directions 60

Implications...62

References..65

LIST OF TABLES AND FIGURES

TABLE / FIGURE PAGE

Table 1: Principal Components Factor Analysis of Role Stressors 42

Table 2: Principal Components Factor Analysis of Coworker Support 43

Table 3: Principal Components Factor Analysis of Engagement at Time 1.......................46

Table 4: Principal Components Factor Analysis of Engagement at Time 1
(Single factor) 47

Table 5: Principal Components Factor Analysis of Engagement at Time 2.......................48

Table 6: Principal Components Factor Analysis of Engagement at Time 2
(Single Factor) 49

Table 7: Means, Standard Deviations, Correlations, and Reliability Measures 51

Table 8: Summary 1 of Moderated Hierarchical Multiple Regression Predicting
Engagement at Time 2 55

Table 9: Summary 2 of Moderated Hierarchical Multiple Regression Predicting
Engagement at Time 2 56

Figure 1: Interaction of Role Ambiguity and Coworker Support on
Engagement at Time 2 57

Introduction

With the advent of positive psychology, the emphasis in organizational research has shifted from identifying poor performers and pathological organizational issues to studying how to optimize the performance of both individuals and organizations (Seligman & Csikzentmihalyi, 2000). One area that has received considerable interest is that of work engagement. As defined by Schaufeli, Martinez, Pinto, Salanova, and Bakker (2002, p. 465) engagement is "a positive, fulfilling, work-related state of mind characterized by vigor, dedication and absorption." This construct has shown considerable promise in helping to understand how we might achieve positive organizational outcomes such as increased productivity, job satisfaction, proactive behaviors, and organizational commitment (Saks, 2006; Salanova & Schaufeli, 2008; Shimazu et al., 2008; Sonnentag, 2003; Wefald & Downey, 2009). It has been postulated that job demands (aspects of the job that require sustained physical or mental effort) could have a negative impact on work engagement, while job resources (aspects of the job that can help achieve work goals, reduce job demands, or stimulate personal growth) may moderate or buffer this relationship (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Demerouti, 2005). Unfortunately, the majority of the research to date has been cross-sectional (collected at one time), which makes it very difficult to understand the nature of engagement, its antecedents or precursors, and its outcomes.

The main purpose of this longitudinal study is to investigate the nature of work engagement over time. Specifically, it investigates if role stressors (a type of job demand), are predictive of work engagement one year later. Additionally, this study investigates the possible moderating or buffering effect of coworker support (a type of job resource) on the relationship between role stressors and later work engagement.

This is the second study to investigate the longitudinal relationship between role stressors and engagement. It is the first study to investigate coworker support as a moderating effect between role stressors and work engagement. This is also the first study to use a one-year time lag in investigating the job demands-resources model in relation to work engagement.

Positive Psychology Perspective

Excluding the last 20 years, the traditional emphasis in psychology has been dedicated to mental illness rather than mental "wellness." The focus, as Bakker and Schaufeli (2008) commented, was on the Four D's (damage, disease, disorder, and dysfunction). Occupational Health Psychology concerns the application of psychology to improving the quality of work life and to protecting and promoting the health, and well-being of workers (Shimazu & Schaufeli, 2008). But a review of articles in the *Journal of Occupational Psychology* from 1996 to 2004 showed that 94% of the articles written dealt with negative issues relating to psychology (Schaufeli & Salanova, 2007).

However, identifying and trying to fix a problem does not necessarily allow you to thrive or be successful (a positive state). Fixing a broken arm does not mean that you will become an all-star pitcher. It just addresses a negative issue or problem and removes you from a negative state. In a way, it is a type of reactive damage control. The new emphasis on positive psychology addresses the positive state; how you get to it, and how to maintain it. Within organizational psychology the questions become: How do we encourage such things as creativity and dedication? What type of work environments make our employees thrive (and our organizations flourish)? What kind of benefits can we expect from satisfied, engaged workers?

Seligman and Csikzentmihalyi (2000) state that the purpose of positive psychology "…is to begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities (p. 5)."

Rather than focusing on repairing damage (the disease model of human functioning), positive psychology has a focus on how to achieve and maintain optimal functioning or competency. It has required a new set of terminology and a new way of looking at organizations. It is unlikely that the mechanisms that lead to negative aspects like employee ill-health and poor performance are the same as those that lead to positive health and optimal functioning. As an example, the broaden-and-build theory (Fredrickson, 2001) proposes that experiencing positive emotions such as pride, contentment or interest leads to a broadening of momentary thought repertoires, which in turn leads to an increase in lasting personal resources. These resources can be physical, intellectual, social, or psychological. Pride creates the urge to share news of achievement and envision greater achievements. Contentment creates the urge to savor your current situation. Interest creates the urge to explore and take in new information. As its name implies, positive psychology studies how we achieve positive experiences like work satisfaction, flow, happiness, high talent, or work engagement.

Work Engagement

While interest in work engagement is fairly recent, there are a wide variety of conceptualizations or definitions for the construct. The following section describes the major conceptualizations for work engagement as found in the literature. For the purposes of this study, the conceptualization as offered by Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) is used. Rationalization for this decision is also included.

Kahn's conceptualization. Kahn (1990) referred to engagement as a situation where people express themselves physically, cognitively, and emotionally during work role performance. Engagement contains aspects of effort, involvement, flow, mindfulness, and intrinsic motivation. Kahn concluded that individuals who experienced engagement at work were more likely to feel a sense of psychological safety in their jobs. Kahn (1992) later introduced a similar construct called psychological presence (connected to work, open to oneself and others, and feeling complete rather than fragmented). Kahn mentions that job characteristics could play an important role in psychological presence. Jobs that limit the extent to which individuals could exercise discretion, use different skills, and make important contributions may limit their psychological presence. Engaged people, according to Kahn, put more effort into their work because they identify with it. This conceptualization is very similar to Kanungo's (1982) definition of job involvement (a belief state or consistent persisting belief of personal identification). Simpson (2009) in her review of engagement refers to Kahn's construct as personal engagement.

Rothbard's conceptualization. Rothbard (2001) also follows somewhat in Kahn's model, defining engagement as attention devoted to and absorption with work and/or family roles. Attention refers to cognitive availability (are you available to think about work or family activities?) and the amount of time spent thinking about a work or family role. Absorption refers to intensity of focus, or being preoccupied or engrossed in a task. Engagement is similar to Kahn's (1990) definition of flow. Rothbard differentiated between engagement with work related matters from engagement with family related matters. Rothbard found that there was crossover for family and work engagement where family engagement enhanced work engagement for women. Family engagement did not enhance work engagement for men. Rothbard hypothesized that the gender differences may be due to men segmenting or separating work and family roles more than women.

Steele and Fullagar's conceptualization. Steele and Fullagar (2009) argue that engagement is very similar to the psychological construct of flow, requiring four core components: optimal balance between challenges and skills, goal clarity, unambiguous feedback, and self-determination. Unlike some definitions of engagement (Salanova & Schaufeli, 2008; Schaufeli, Bakker, & Salanova, 2006; Shimazu & Schaufeli, 2008), flow is transitory rather than a long lasting state. Because engagement was not thought to be long lasting, it was hypothesized that it should be malleable or easy to change.

Macey and Schneider's conceptualization. Macey and Schneider (2008) describe employee engagement as having three facets: trait engagement (positive views of life and work), state engagement (feelings of energy, absorption, commitment, satisfaction), and behavioral engagement (extra-role behavior). This theory ties in an affective state (trait engagement), a psychological state (state engagement) and a behavioral state. It could be argued that of these three elements, the psychological state (state engagement) has the most overlap with other definitions of engagement. Trait engagement describes personal characteristics or temperament (like positive affect) that might lead someone to be more inclined to experience engagement. Behavioral engagement describes the outcome of engagement (what might happen after engagement). The focus of behavioral engagement only on extra-role behaviors is curious. Extra-role behaviors are activities that go beyond normal job requirements that an individual completes without expecting a direct reward. Work engagement should be related to both in-role (normal job activities) as well as extra-role behaviors.

Britt's conceptualization. Brit (1999) described engagement as a construct that includes components of responsibility and commitment. The more responsible and committed an individual feels over an event, the more engaged they are. Individuals are more likely to be engaged when their job guidelines are clear, when they feel that they have personal control over their job performance, and when their training is relevant to their work. Britt later discusses job engagement as an individual's commitment to doing well in one's job, because the person feels the job is central to their identity (2003). An engaged state is described as being absorbed in job performance. Job engagement is described as a motivational state that is related to the identity-relevance of a task (how central the task is to your identity) rather than the "importance" of a task. Britt and Bliese (2003) reported a moderating effect for engagement in the relationship between stressors and psychological distress (strain). Soldiers who had high levels of stressors reported less psychological distress when they had high engagement rather than low engagement. The ability to find meaning in work was also related to reduced stress months after a deployment was over (Britt, Adler, & Bartone, 2001).

Gallup's conceptualization. The Gallup Organization also uses the term engagement and refers to its importance in business outcomes. The term employee engagement refers to the individual's involvement, satisfaction, and enthusiasm for work (Buckingham & Coffman, 1999; Harter, Schmidt, & Hayes, 2002). The measurement of employee engagement focuses on key antecedents of engagement: clarity of expectations, feelings of contribution, having materials or resources to complete work, sense of belonging, and opportunities to grow. Other researchers might identify these antecedents as job resources, as each provides either assistance in meeting job goals or stimulates personal growth and development. Luthans and Peterson (2001) found that employee engagement was strongly related to a manager's effectiveness, which is not surprising, because an effective manager (one that promotes self-efficacy) could be seen as an additional job resource. Simpson (2009), in her review of the engagement literature, refers to this construct as employee engagement, noting that there is similarity between Kahn's (1990) and Harter et al.'s conceptualizations in that they both are based on individual involvement, satisfaction, and enthusiasm. As the Gallup measure incorporates self-reported employee satisfaction with engagement antecedents (or job resources), it might be appropriate to equate this conceptualization of engagement to satisfaction with job resources.

Maslach and Leiter's conceptualization. The roots of this line of engagement research are actually found in the research on burnout. Burnout research started by examining issues in caregiving and service related occupations (Maslach, Schaufeli, & Leiter, 2001). Human service providers such as nurses, attendants, and teachers often have stressful and physically demanding interactions with clients. These interactions could lead to physical and emotional exhaustion. To cope with emotional exhaustion, it was hypothesized that these individuals would often distance themselves from their clients (depersonalization). Emotional exhaustion and depersonalization were two of the early themes of burnout research. In 1981, Maslach and Jackson created the Maslach Burnout Inventory (MBI) to continue investigating burnout in human services occupations (Maslach, Jackson, & Leiter, 1996). Burnout was defined as a negative work-related state of mind characterized by exhaustion, a sense of reduced effectiveness, and decreased motivation. Leiter and Maslach (2001) propose that there are six areas of work where a mismatch with an individual could lead to burnout: workload, control, reward, community, fairness, and values. It is the match with the individual and not the value itself that can lead to burnout. For one person the workload may be excessive, because it does not match their expectations; for another person that same workload may be fine, as it may match their expectations.

There has been a growing interest in applying this instrument to occupations outside of the human services field. Wilmar Schaufeli was the lead author of the MBI-GS (Maslach Burnout Inventory – General Survey), which was an expansion of the MBI beyond human services professions (Schaufeli, Leiter, Maslach, & Jackson, 1996). The

MBI-GS places more emphasis on rating the aspects of a job and less emphasis on client interactions or relationships that might be part of the job (which is an important part of the original MBI). The MBI-GS has been described as having three factors: exhaustion, cynicism, and lack of personal efficacy. Exhaustion measures fatigue. Cynicism measures indifference toward work. Personal efficacy measures occupational accomplishments. Burnout was found to be related to decreased job performance and increased stress-related health problems (Maslach et al., 2001). Burnout is described as erosion of the important, meaningful, and challenging aspects of work, leaving something unpleasant. Engagement is described as the opposite of burnout.

Greco, Spence-Laschinger, and Wong (2006) in a study of leadership empowerment and burnout/engagement treat the dimension of emotional exhaustion as the core element of burnout. They make the assumption that low levels of emotional exhaustion are equivalent to engagement (energy). This was stated in a study of nurses, and the levels of emotional exhaustion among them were quite high (even for nurses). They conclude that specific leadership strategies can lead to a more engaging satisfying workplace. A different interpretation could be that these leadership strategies will leave nurses less emotionally exhausted. If you decrease exhaustion, would it really be the same as creating an engaging, satisfying workplace? It is common for burnout researchers to focus on exhaustion (a loss of energy or wearing out). It is the core dimension of burnout that most researchers state is important (Maslach, Leiter & Schaufeli, 2008). While some researchers argue that high exhaustion is synonymous with burnout, Maslach and colleagues would disagree. They argue that exhaustion is a stressor, but does not capture the relationship or attitude that people have with their work.

By studying burnout, researchers have become more interested in an opposite state, work engagement (Schaufeli & Salanova, 2007). Engagement would be reflected by low scores on emotional exhaustion and cynicism, and high scores in personal efficacy (Maslach & Leiter, 2008). Demerouti and colleagues (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) proposed a two-factor model for burnout (exhaustion and disengagement). They found that high job demands (physical workload) would lead to exhaustion, while low amounts of resources (especially feedback and participation) would lead to disengagement. Demerouti et al. found support for their two-factor model of burnout in a cross-sectional study involving individuals in three different occupational fields: human services, industry, and transport. The authors found that the two-factor model worked well with the different occupation types.

Schaufeli and colleagues' conceptualization. Schaufeli and colleagues (Schaufeli, Salanova, et al., 2002) argued that an individual who is not "burned out" is not necessarily engaged. If a person is not exhausted, it does not mean that they are energized. If a person is not cynical, it does not mean that they are dedicated. They proposed a separate measure for engagement called the Utrecht Work Engagement Scale (UWES). Engagement was defined as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication and absorption" (Schaufeli, Salanova, et al., 2002, p.465). The dimension of vigor refers to high energy and mental resilience while working. The dimension of dedication is characterized by strong psychological involvement, combined with enthusiasm, pride, and a sense of challenge. The dimension of absorption refers to concentration and immersion in work (where one loses track of time). May, Gilson, and Harter (2004), independent of Schaufeli, created a very similar construct of engagement. They propose that engagement has three elements: cognitive (similar to absorption), emotional (similar to dedication) and physical (similar to vigor). The authors felt that the three elements could be collapsed into a global measure of engagement. They compared this construct with the concepts of psychological meaningfulness, psychological safety, and psychological availability (Kahn's definition of engagement) and found that meaningfulness (the degree of meaning that individuals perceive in their work) had the strongest relationship with engagement. May, Gilson, and Harter's conceptualization has not been used in other published studies.

Some researchers have reported findings that vigor and exhaustion (burnout dimension) are opposites on a bipolar dimension of "energy," while dedication and cynicism are opposites on a dimension of "identification" (Gonzalez-Roma, Schaufeli, Bakker, & Lloret, 2006; Llorens, Schaufeli, Baker; Salanova, & Schaufeli, 2007). If so, you would expect strong negative correlations between the measures. Duran, Extremera, and Rey (2004a) found a moderate negative correlation between emotional exhaustion and vigor (r = -.55), and a significant but not compelling negative correlation between depersonalization (used rather than cynicism) and dedication (r = -.22). The authors comment that the smaller than expected correlation may be due to the use of depersonalization rather than cynicism questions associated with the Maslach Burnout Inventory. Nonetheless, other researchers have also noted that vigor and dedication are the two core components of work engagement (De Lange, De Witte, & Notelaers, 2008; Hakanen, Schaufeli, & Ahola, 2008; Llorens et al., 2007; Mauno, Kinnunen, & Ruokolainen, 2006; Salanova & Schaufeli, 2008). Prieto, Soria, Martinez, and Schaufeli (2008) also agree, noting that absorption may be a consequence of engagement rather than a component.

Unlike individuals with burnout, engaged employees have both a sense of energetic connection and a sense of being effective in their work activities. They also perceive that they can deal with the demands of their work (Schaufeli & Salanova, 2007). Salanova and Schaufeli (2008) also describe engagement as an indicator of intrinsic work motivation. Rather than being a momentary state, engagement refers to a more persistent, affective-motivational state that is not focused on any particular object, event or behavior.

Schaufeli (2004) reports that people in some professions are generally high in engagement (e.g., managers, entrepreneurs, farmers) while those in other professions are generally low (e.g., many blue-collar workers, police officers, and home care staff). Schaufeli, Bakker, et al. (2006) report that levels of engagement do not appear to differ across gender, but differences are found between occupational groups, with blue collar workers being less engaged than managers, educators, and police officers. They hypothesize that the difference may be due to a lack of job resources.

Schaufeli, Taris and Bakker (2006) are able to distinguish between work engagement and workaholism (with factors of excess work and compulsive work). Work engagement correlated with the excess work factor, but not with the compulsive work factor. Work engagement was found to be positively related to well-being (e.g., perceived health, life satisfaction, and sick days), while workaholism was negatively related with well-being.

Bakker, van Emmerik, and Euwema (2006) found that both burnout and engagement could transfer from teams to individual team members. Team level burnout and work engagement were predictive of individual burnout and engagement, respectively, after controlling for job demands (i.e., work pressure, physical demands, emotional demands, and performance expectation demands) and job resources (i.e., autonomy, opportunity for professional development, supervisor support, social support from colleagues, team spirit, financial rewards, and satisfaction with benefits).

Rationale for using Schaufeli's conceptualization. The present study utilizes the conceptualization by Schaufeli (Schaufeli, Salanova, et al., 2002). Rationales for this are mentioned below.

First, there are practical reasons to use Schaufeli's conceptualization of work engagement. It has been the most frequently used conceptualization in the literature, with widely demonstrated antecedents and known associated outcomes. The instrument has demonstrated psychometric properties and factor structure.

Second, there are content reasons that make Schaufeli's conceptualization more attractive. Maslach and Leiter's argument that the opposite of burnout is engagement is not in the spirit of positive psychology. The opposite of damaged is repaired, but being repaired does not imply optimally performing. Furthermore, Kahn (1990), Rothbard (2001), and Steele and Fullagar (2009) all see engagement as a type of absorption or flow, primarily a cognitive state that does not capture the emotional relationship between the individual and the role. On the other hand, Britt's (1999) conceptualization of engagement relies almost entirely on dedication and identification with the role. The Gallup conceptualization (Harter et al., 2002) is more about job satisfaction or satisfaction with job resources than about work engagement. Schaufeli defines engagement as being independent from job resources and positive organizational outcomes (Bakker & Schaufeli, 2008). All of these conceptualizations have missing components, which the Schaufeli conceptualization covers.

Outcomes of Work Engagement

There have been many studies that have examined the antecedents and outcomes of work engagement. A fair criticism that can be levied against most of these studies would be their cross-sectional nature. It is difficult to be sure of the direction of a relationship, if you are only collecting data at one time (does low engagement lead to a high intention to quit, or is it the other way around?). That being said, the following section discusses potential outcomes reported in the literature.

Performance. Schaufeli, Martinez, et al. (2002) report weak to moderate positive correlations (r =.10 to .23) with vigor in students and academic success in a cross-sectional study. There were no consistent significant correlations for dedication or absorption and academic success. Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) report a lagged effect of a previous day's coaching on the next day's work engagement in a study of restaurant workers. When employees were more highly engaged, they were also more likely to bring in more profit. Bakker and Demerouti (2008) postulate that there are at least four reasons why engaged employees perform better than their non-engaged counterparts. Engagement can lead to positive emotions. Engagement can lead to better health. Engagement can lead to creation of more job resources. Engagement can also be transferred to coworkers.

Intent to quit/turnover. Simpson (2008) reported that staff interaction (a job resource) was positively related to engagement and thinking of quitting was negatively related to engagement in a cross-sectional study of nurses. De Lange et al. (2008) report that low department resources, low job autonomy and low work engagement were predictive of later (16 months) actual turnover. They assessed workers through a time lagged web survey (16 months). They found that for individuals who stayed at their place of employment, baseline engagement and job autonomy were predictive of later engagement. They also found a relationship between low work engagement, low autonomy, and low departmental resources and later leaving to work for a new company.

Satisfaction. Shimazu et al. (2008) report that engagement is positively related to job satisfaction (i.e., career satisfaction, interpersonal relation satisfaction, ability utilization) in a cross-sectional study. Wefald and Downey (2009) report that engagement is highly related to education satisfaction (satisfaction with selected major, satisfaction with school, satisfaction with courses and extracurricular activities) in a cross-sectional study of students. Saks (2006) reports that perceived organizational support was correlated to job engagement and organization engagement. Both job and organizational engagement were also related to job satisfaction, organizational commitment and intention to quit. This was a cross sectional study with the author's self-developed measure of job and organization engagement (that reflects psychological presence).

Proactive behaviors. Sonnentag (2003) found that engagement was predictive of later proactive behaviors (i.e., initiative and pursuit of learning) in a 5-day daily survey study. Salanova and Scahufeli (2008) found that work engagement mediates the relationship between job resources (i.e., job control, feedback, variety) and proactive behavior. They postulate that engagement plays a role similar to the critical psychological states (i.e., meaningfulness, responsibility, knowledge of the results) in the Job Characteristics Theory (Hackman & Oldham, 1980). Hackman and Oldham thought that these states mediated the relationship between job characteristics (resources and demands) and outcomes (like proactive behavior). There is a distinction because engagement is thought to be an affective as well as a psychological state. They further argue that proactive behavior is less related to personal disposition (the actual job a person works at) but rather more related to perceived job resources.

Health issues. Britt, Castro, and Adler (2005) reported in a study of soldiers that baseline self-engagement moderated the effect of work hours on later (1 to 6 month) health issues. Soldiers with high engagement reported fewer symptoms when work hours were high. They also found that baseline engagement moderated the effect of work overload on later health issues, but the directionality of the finding was reversed. Soldiers with high engagement reported fewer symptoms when the workload was low. They conclude that the moderating effect of engagement may be different for different kinds of stressors.

Antecedents of Engagement and the Job Demands – Resources Model

As each occupation requires its own skill set for success, each occupation also has its own set of demands (or risk factors for stress) and potential job resources (to help satisfy demands, or meet work goals). Demerouti and colleagues' (2001) job-demands-resources (JD-R) model postulates that each occupation has its own set of critical job demands as well as job resources. Job demands are not necessarily negative as long as they do not exceed a person's ability to deal with or adapt to them. If the demands exceed a person's capabilities they become a stressor and could lead to burnout (Schaufeli & Bakker, 2004). Examples of job demands include workload, organizational change, role stressors, and task interruptions.

Job resources are features of the job that are functional in achieving work goals and reduce job demands and the costs associated with them. They also stimulate personal growth and development (Demerouti et al., 2001). Examples of job resources include supervisor or social support, financial rewards, opportunities to use skills, and career opportunities. Hackman and Oldham's (1980) job characteristics theory proposed that job resources could motivate at the task level by providing such things as feedback or job control. Job resources may play an intrinsic motivational role by increasing employees' growth, learning, and development or play an extrinsic motivational role in achieving work goals (Bakker & Demerouti, 2008). Job resources may be found at the organizational level (e.g., salary, career opportunities), in interpersonal and social relationships (supervisor and coworker support), the organization of the work (role clarity and participation in decision making), and the task (performance feedback, skill variety) (Bakker, et al., 2007).

The central assumption of the JD-R model is that job demands evoke a stress response that could deplete energy, whereas lack of job resources evokes a withdrawal process because it undermines motivation and learning (Bakker, Demerouti, & Euwema, 2005; Demerouti et al., 2001).

The JD-R model also proposes that the interaction between job demands and job resources is important in understanding the development of both burnout as well as engagement (Bakker, Schaufeli, Demerouti, & Euwena, 2006). Job resources may buffer the impact of excessive job demands or stress (Baker, Demerouti, & Euwema, 2005). Many different types of job demands and resources may interact. The combination of high demands and low resources leads to burnout. The specific job demands and resources that are important may depend on the position (Bakker, Schaufeli, et.al., 2006). Schaufeli and Bakker (2004) reported that while burnout is predicted by high job demands (workload and emotional demands) and low job resources (performance feedback, coworker social support, and supervisory coaching), engagement is predicted only by high job resources. Klusmann, Kunter, Trautwein, Ludtke, and Baumert (2008) in a cross sectional study of teachers found different significant predictors for engagement (principal support) and burnout (number of classes taught). They concluded that research should treat engagement and burnout separately.

Conservation of Resources (COR) theory postulates that people want to retain, protect and build resources. Job resources may be motivating in their own right through the creation, maintenance and accumulation of resources (Hobfoll, 1989). People experience stress when these resources are threatened or when there is a net loss of resources. COR theory also states that there may be “loss spirals” and “gain spirals” for resources. Llorens et al.’s longitudinal study (2007) supports the presence of gain spirals, with task resources predicting later engagement and engagement predicting later task resources. Prieto et al.’s study (2008) of teachers before and after a school year supports the presence of loss spirals, with prior burnout being predictive of burnout eight months later.

JD-R and antecedents of burnout. Van Vegchel, de Jonge, Soderfeldt, Dormann, and Schaufeli (2004) in a longitudinal study of human service workers found that baseline emotional demands, quantitative demands, job control, and social support were predictive of burnout one year later. Emotional demands and quantitative demands were positively related to burnout but job control and social support were negatively related to it.

Bakker, Demerouti and Verbeke (2004) found that job resources (autonomy, professional development, and social support) were important predictors of extra-role performance through their relationship with disengagement (burnout measure). However, they did not find that job resources buffered the impact of job demands (workload, emotional demands, work-home conflict) on exhaustion.

JD-R and engagement. The JD-R model proposes that job resources are critical in determining work engagement (Schaufeli & Bakker, 2004). The literature, for the most part, supports this. De Lange et al. (2008) found 16 studies that reported strong positive relationships between job resources and work engagement.

The following are some of the findings linking job resources to work engagement. Demerouti et al. (2001) found that job resources (performance feedback, supervisor support, job control) were predictors of engagement. This held true for individual perceptions of job resources as well as when resources were measured by an independent observer. Mauno et al. (2006) found that job resources were more highly related to later (two year later) work engagement (vigor and dedication) than job demands. De Lange et al. (2008) report that job autonomy was somewhat predictive of later (16 months) work engagement. This result held true only for people who stayed at the same job, not for those who were promoted or left for another position. Salanova, Agut, and Peiro (2005) found that for service employees, organizational resources (training, job autonomy, and technology) were predictive of work engagement. Work engagement and organizational resources were predictive of service climate. The researchers had data from both employees and customers. Employees' perceptions of service climate were predictive of customers' perceptions of employee performance and customer loyalty. Van den Broeck, Vnsteenkiste, De Witte, and Lens (2008) found a relation between job resources (task autonomy, opportunities for skill utilization, positive feedback) and the vigor component of engagement. They found that need satisfaction (autonomy satisfaction, belongingness satisfaction, competence satisfaction) mediated the relationship between job resources and vigor. Hakanen, Bakker, and Schaufeli (2006) found support for the JD-R in a cross-sectional study of teachers. They found that work engagement mediated the effects of job resources on organizational commitment.

A longitudinal study showed a positive spiral between job autonomy (a job resource) and work engagement (which also had a lagged association with job autonomy) (Llorens et al., 2007). Hakanen et al. (2008) found longitudinal support for the motivational and health impairment processes assumed in the JD-R model. Job resources led to increased engagement, whereas job demands led to burnout and depression. Lack of job resources weakly predicted burnout and job demands negatively predicted engagement (also weakly), showing that there is some intertwining of the motivational and health impairment processes.

Bakker, Demerouti, and Schaufeli (2005) report evidence for the crossover of both engagement and burnout between husbands and wives. This study also reported that some crossover between home and workplace demands occurred on engagement factors for women. For women, home emotional demands were negatively related to workplace engagement, while home cognitive demands were positively related to engagement. There was no relationship between home demands and engagement for men. The authors hypothesize that men may be able to keep home and work domains segmented or separated more easily.

Can personal resources, such as emotional intelligence, act in the same way as job resources? The following studies support the notion that personal resources could act in a similar fashion as job resources. Duran, Extremera, and Rey (2004b) found that an aspect of emotional intelligence was correlated with all three facets of engagement in professionals who take care of people with intellectual disabilities (referred to as a highly stressful occupation). The aspect of emotional intelligence that was critical was called “repair to moods,” which was defined as the ability to regulate your emotional state (which because of the work setting is probably critical). Hallberg, Johansson, and Schaufeli (2007) investigated if Type A behavior (achievement striving and impatience) would relate to work engagement. Would Type A behavior be more of a personal resource or demand? For this sample, it turned out that the achievement striving element of Type A behavior was positively related to work engagement, but the impatience element of Type A behavior was negatively related to work engagement. Achievement striving was not related to burnout. It was concluded that parts of Type A behavior are positively related to work engagement. Langelaan, Bakker, van Doornen, and Schaufeli (2006) looked at certain personality (neuroticism and extraversion) and temperament traits (strength of excitation, strength of inhibition, and mobility) to see if they could predict individuals with those personality and temperaments traits who were more likely to be burned out or engaged. Engaged individuals were characterized by low scores on neuroticism (tendency to experience distressing emotions like frustration, fear, or depression) and high scores on extraversion (tendency toward cheerfulness, sociability, and high activity), while burned out individuals were characterized only by high neuroticism. Strength of excitation (preference for demanding activities) and strength of inhibition (ability to refrain from impulsive reactions) were not predictive of work engagement or burnout, but high scores of mobility (ability to respond quickly to changes) were indicative of engagement.

The JD-R model also proposes that job resources are likely to have more of an impact on work engagement when job demands are high (Bakker, Schaufeli, et al., 2006). Hakanen et al. (2005) found support for the JD-R and in particular the buffering effects of job resources in a cross-sectional study of dentists. Positive patient contacts buffered the effect of workload and poor physical work environment on work engagement. They also found that peer contacts (social support) buffered the effect of work changes on engagement. Job resources (including perceived supervisor support, organizational climate, innovativeness, and appreciation) moderated the effects of pupil misbehavior on engagement for teachers (Bakker et al., 2007). Pupil misconduct was not as detrimental to work engagement when teachers received support and appreciation from their supervisors and colleagues.

However, Korunka, Kubicek, Schaufeli, and Hoonakker (2009) did not find support for job resources (supervisory support, coworker support, decision latitude) buffering the effects of job demands (qualitative and quantitative workload) on burnout, nor did they find support that job resources differentially increase work engagement when job demands were high. However, this study used a sample of both white and blue-collar factory workers. It is possible that the job resource of decision latitude was not as pertinent or important for the blue-collar workers. They did find that job demands were predictive of burnout and that job resources were predictive of engagement. Turnover intention was predicted by engagement, but not by burnout. In their research they found that these relationships held true across age groups and gender, but not across occupational groups (blue collar vs. white collar). The two groups differed in the importance of decision latitude and support from coworkers. Different job resources may be more or less important depending on the occupational group.

In summary, while job resources have been found to be more important in predicting engagement than burnout, there has also been a moderating or buffering effect found for certain job resources (such as social support, supervisor support, organizational climate, and appreciation) on the relationship between job demands and work engagement. The next sections will introduce role stressors as an important job demand and coworker support as a potential job resource.

Role Stressors as Job Demands

Rizzo, House, and Lirtzman (1970) describe role stressors as they relate to the principle of chain of command and the principle of unity of command. The chain of command principle states that organizations should have hierarchical relationships with a single flow of authority from the top going down. The unity of command principle states that for each action, an employee should be receiving instructions from one supervisor only, and that there should be only one plan for any group of activities with a common objective. Role ambiguity occurs when it is unclear what actions should be taken to meet the expectations of the role. Role conflict occurs when there are mixed or incompatible messages about how to satisfy expectations for a single role.

Ortqvist and Wincent (2006) describe the three facets of role stress as role conflict (incompatible expectations for a role), role ambiguity (uncertainty as to what actions will satisfy the expectations of a role) and role overload (time or lack of resources will not allow you to meet expectations for a role).

Outcomes of role stressors. Ortqvist and Wincent (2006) in their meta-analytic review of the consequences of role stress report that the idea that role stress is detrimental has been widely supported and has been described in over 300 journal articles. They examined the consequences of role conflict and role ambiguity as distinct facets of role stress. In regards to role conflict, the meta-analysis found medium effect sizes (relationships) with organizational commitment, job satisfaction, propensity to quit, and tension. Role conflict had small effect sizes with emotional exhaustion, depersonalization, personal accomplishment, and performance. In regard to role ambiguity, the analysis found medium effect sizes with tension, job satisfaction, propensity to quit, and organizational commitment. Role ambiguity had a small effect size with emotional exhaustion and negligible effect sizes with performance, personal accomplishment, and depersonalization.

Leiter and Maslach (1988) in a cross-sectional study of hospital personnel found that role conflict and unpleasant supervisor interactions were both positively related to the emotional exhaustion element of burnout. Kirk-Brown and Wallace (2004) report that role ambiguity is a significant predictor of emotional exhaustion (a component of burnout), but neither role conflict nor role ambiguity was a significant predictor of job satisfaction in a study of counselors. Schuler, Aldag, and Brief (1977) examined the effect of role stressors on work satisfaction, performance, and job involvement. They found that both role conflict and role ambiguity had negative relationships with these variables. They state that their finding was unusual because typically, role ambiguity has a greater negative effect on outcomes than role conflict. Their findings did not support that.

Hallberg and Schaufeli (2006) report a negative relationship between role conflict and engagement in a cross-sectional study of white-collar professionals. This study compared the differences between work engagement, job involvement, and organizational commitment. Hallberg and Schaufeli's measure of role conflict is not standard, as they modified Rizzo et al.'s (1970) measure to include a role question involving conflict between customers and supervisors. Role ambiguity was not examined in this study.

Peiro, Gonzalez-Roma, Tordera, and Manas (2001) conducted a longitudinal study of role stressors and burnout with a one-year time lag. They regressed Time 1 role ambiguity and role conflict on the Time 2 burnout factors of emotional exhaustion, depersonalization, and personal accomplishment. In their hierarchical regression analysis, they also accounted for the Time 1 burnout factor and included the Time 2 role stressor to examine the impact of change in stressors over 1 year. They found that neither role ambiguity nor role conflict at Time 1 predicted emotional exhaustion at Time 2, but the change in role ambiguity and the change in role conflict between Time 1 and 2 did predict exhaustion at Time 2. Neither role ambiguity at Time 1 nor the change in role ambiguity between Time 1 and Time 2 predicted depersonalization at Time 2. Role conflict at Time 1 predicted depersonalization at Time 2, but change in role conflict between Time 1 and Time 2 did not. Only the change in role ambiguity between Time 1 and Time 2 predicted personal accomplishment at Time 2.

To summarize, the literature supports the relationship between role conflict and work engagement, at least in a cross-sectional design (Hallberg & Schaufeli, 2006). Using a longitudinal design, changes in role stressors between time 1 and time 2 were related to certain aspects of burnout at time 2 (Peiro et al., 2001). To date, there has only been one study that investigated the longitudinal relationship between role stressors and work engagement (Prieto et al., 2008), however their study focused only on vigor and dedication.

Coworker Support/Social Support as a Job Resource

Coworker support is defined as social support given by co-workers in a work setting. Social support can be given in four areas: emotional support (caring, empathy, trust), instrumental support (providing tangible aid or goods), informational support (assisting in problem solving), and appraisal support (affirmation or communicating self-evaluation) (Langford, Bowsher, Maloney & Lillis, 1997). Social support constructs and measures have not been well defined (Thoits, 1982), leaving most researchers to construct their own global measures of support (as was done in the current study).

Outcomes of coworker support. Social support is perhaps the most well known variable that has been studied as a possible buffer against stress (Bakker, Schaufeli, et al., 2006). Haines, Hurlbert, and Zimmer (1991) hypothesized that social support plays an important role in the stress-strain model. High levels of stressors are likely to produce strain in individuals who are receiving low amounts of social support, but not for individuals with high social support. They call this the buffering hypothesis. They report that there is consistent support for the buffering hypothesis in the literature, but only when the stress and strains are framed for occupational topics. They report their own findings that work support (coworker support) buffers the relationship between workload and role conflict with strain (physical or health problems). Johnson and Hall (1988) report that those who had high work demands, low social support and low job control were more likely to have problems with cardiovascular disease than those with high work demands but high social support.

Other researchers have reported negative correlations with coworker support and burnout. Jannsen, Schaufeli, and Houkes (1999) reported on a cross-sectional study of nurses that coworker social support is negatively related to the burnout dimensions of emotional exhaustion and depersonalization. There was a very similar finding for supervisor support, as well. Van Vegchel et al. (2004) found that social support had a significant negative correlation with burnout measured one year later. Houkes, Janssen, De Jonge, and Nijhuis (2001) in a cross sectional study of bank employees and teachers found that emotional exhaustion was predicted by high workload and low levels of coworker social support.

Social support was found to negatively correlate with the exhaustion and cynicism dimensions of burnout and positively relate to the dimension of professional efficacy in a study of teachers (Bakker, Demerouti & Euwema, 2005). Social support played a moderating role on the relationship between work overload and exhaustion. Social support also played a moderating role on the relationship between emotional demands and cynicism. Klussman et al. (2008) reported from a cross sectional study of teachers that social support was negatively related to emotional exhaustion.

Coworker support has been linked to other positive outcomes as well. Leiter and Maslach (1988) in a cross-sectional study of hospital personnel found that positive coworker interactions were positively related to feelings of personal accomplishment. Seers, McGee, Serey, and Graen (1983) found that support from coworkers was positively related to both work satisfaction and supervisor satisfaction. Coworker support also moderated the relationship between role conflict and supervisory satisfaction.

Etzion (1984) found that for men, work support (feedback, appreciation, recognition, opportunity to take time off, sharing of responsibility, reciprocity, and the quality of relationships with coworkers, supervisors, and subordinates) played a buffering role between work stress and burnout, while for women, support in life (feedback, appreciation, recognition, opportunity to take time off, sharing of responsibility, reciprocity, and the quality of relationships with spouses, family members, and friends) played a buffering role between work stress and burnout. In both instances, the impact of support was greatest for those who were under high stress conditions rather than low stress conditions.

Coworker support and engagement. According to Conservation of Resources Theory, job resources play an important role in reinforcing positive images of oneself and could lead to work engagement (Demerouti et al., 2001). Social support may also play an extrinsic motivational role in better achieving work goals.

Schaufeli and Bakker (2004) found that coworker social support is positively related to the engagement dimensions of vigor and dedication in a cross-sectional study. Korunka et al. (2009) report that coworker support and supervisor support were predictive of engagement (vigor, dedication, and absorption). Coworker support was more predictive for white-collar workers than for blue-collar workers in their cross-sectional study. Montgomery, Peeters, Schaufeli, and Den Ouden (2003) found a positive correlation between social support from colleagues and the engagement constructs of vigor and dedication in a cross-sectional study of newspaper managers. Bakker, Demerouti, and Schaufeli (2005) found a positive relationship between work social support and vigor and dedication (engagement) among women, but not among men. They conclude that different resources may be more important for women than for men. Simpson (2008) reported that interaction among nurses was related to job engagement.

However, not all studies have supported a link between coworker social support and engagement. De Lange et al. (2008) did not find social support predictive of later (16 months) engagement. Thus, to the author's knowledge, the present study is the first to look at coworker support as a moderator in predicting later work engagement.

Longitudinal Studies of Engagement

Is work engagement stable over time? Shimazu et al. (2008) report a stability coefficient for work engagement of .66 over an interval of two months. Schaufeli, Bakker, et al. (2006) reports that between 31% and 53 % of the variance of later engagement is explained by an earlier measurement of engagement. This evidence makes the case that engagement is not transient, but stable.

However, Maslach and Leiter (2008) reported that individuals who have inconsistent scores across the three factors of burnout (high scores on one factor but not on others) are likely to change over time. Maslach and Leiter hypothesized that having a single high score on one factor of burnout would not be stable, as typically all three factors are fairly well correlated. They found support for this hypothesis in a one-year time-lagged study (71% of those with inconsistent scores changed in burnout over one year, versus 45% of those with consistent scores). Although individuals with inconsistent scores are more likely to change, an additional variable was needed to predict the direction of change: perceived fairness of worklife. Those who scored higher on perceived fairness were more likely to become engaged, while those who scored lower on perceived fairness were more likely to become burned out.

The longitudinal research mostly supports the job demands-resources model. Mauno et al. (2006) found that job resources are more highly related to later (two-year) work engagement (vigor and dedication) than job demands. However, the lagged effects of most job resources were not significant if you controlled for baseline engagement. They felt that the stable nature of work engagement made it difficult to detect significant predictors of later engagement. Job control (as a specific resource) was still a significant predictor of later dedication. This was the first study to consider the baseline levels of engagement in later engagement.

Llorens et al. (2007) found that personal resources (efficacy beliefs) mediated the relationship between task resources (job resources) and later work engagement. This was investigated through a laboratory experiment with a three-week lag period. The more task resources that were available, the higher were the levels of vigor and dedication three weeks later. Engagement increased efficacy beliefs, which in turn increased task resources over time.

Hakanen et al. (2008) conducted a longitudinal study of dentists with a 3-year time lag. They found that even after controlling for baseline work engagement, job resources (craftsmanship, professional contacts, long term and immediate results) predicted later work engagement.

Prieto et al. (2008) assessed teachers before and after an eight month lag (school year), measuring job demands (quantitative overload, mental and emotional demands, role ambiguity, and role conflict), job resources (autonomy and support climate), personal resources (competencies), burnout, and engagement. Prieto et al. found that after controlling for the initial level of vigor, job demands and resources were no longer predictive of later vigor. However, after controlling for initial dedication, quantitative overload and role ambiguity were still significant predictors of later dedication. There was no effect of job resources (support climate or autonomy) on any components of later engagement. They conclude that it is important to know the baseline levels of engagement to examine the importance of later job demands or resources. Cross sectional studies, that do not account for baseline engagement, might incorrectly conclude that job demands and resources have a more important role than they do.

De Lange et al. (2008) assessed workers through a time lagged web survey (16 months). They found that for individuals who stayed at their place of employment, baseline engagement and job autonomy were predictive of later engagement. They also found a relationship between low work engagement, low autonomy, and low departmental resources and later leaving to work for a new company.

Sonnentag (2003) in the first longitudinal study of engagement (over five consecutive workdays) found that work recovery (or rest) related to later engagement and that day-level engagement related to later proactive behaviors (initiative and pursuit of learning). This was also the first study that showed that nonwork experiences (rest) could be predictive of later engagement.

Britt et al. (2005) reported in a study of soldiers that baseline self-engagement moderated the effect of work hours on later (1 to 6 month) health issues. They conclude that the moderating effect of engagement may be different for different kinds of stressors.

Xanthopoulou et al. (2009) report a lagged effect of a previous day's coaching on the next day's work engagement in a study of restaurant workers. When employees were more highly engaged on the first day, they were more likely to bring in more profit on the second day.

The past longitudinal research that investigates predicting work engagement has had time lags ranging from days (Sonnentag, 2003) to three years (Hakanen et al., 2008). However, the majority of studies examined relatively short duration time lags (of less than half a year). This study will be the first to look at a time lag of one year.

Hypotheses

There has been good support for stability of work engagement over time. (Schaufeli, Bakker, et al., 2006; Shimazu, et al., 2008). It is expected that work engagement should be fairly stable over a period of one year.

> *Hypothesis 1:* Work engagement at Time 1 (T1) will be positively and significantly related to work engagement at Time 2 (T2).

Hallberg and Schaufeli (2006) reported a negative relationship between role conflict and engagement in a cross-sectional study of white-collar professionals. There has been no longitudinal study looking at the delayed effect of role stressors on engagement, but according to the JD-R theory we can hypothesize that the relationship would be negative.

Hypothesis 2: Role conflict at T1 will be negatively and significantly related to work engagement at T2.

Hypothesis 3: Role ambiguity at T1 will be negatively and significantly related to work engagement at T2.

The JD-R theory would also allow us to hypothesize that coworker support (a job resource) should play a moderating or buffering role in the relationship between role stressors (job demands) and later work engagement (Bakker et al., 2007; Hakanen et al., 2005). Different job resources should be able to act as buffers for various job demands. In a setting where role stressors create problems, it can be hypothesized that coworker support should be able to buffer the role stressors.

Hypothesis 4: Coworker support at T1 will moderate the relationship between role conflict at T1 and engagement at T2. The relationship between role conflict and later engagement will be stronger when coworker support is low than when it is high. When coworker support is low, there will be a negative relationship between role conflict and later engagement.

Hypothesis 5: Coworker support at T1 will moderate the relationship between role ambiguity at T1 and engagement at T2. The relationship between role ambiguity and later engagement will be stronger when coworker support is low than when it is high. When coworker support is low, there will be a negative relationship between role ambiguity and later engagement.

Method

Participants

Participants were 96 employees of the main units (reference, access services, technical services, informational technology, administration, and other services) of a combination university-public library in Northern California. Participants received no compensation for their participation

Of the estimated 265 employees at the library, 169 completed surveys in Fall of 2003 and 162 completed surveys in Fall of 2004. There were 96 participants who were identified as completing both surveys (the matching process is described under Procedure). The response rate for individuals completing both surveys was 36% for all employees and 59% of 2004 respondents.

Thirty five percent of the sample had supervisory responsibilities and 65% did not. Seventy percent worked full-time and 30% worked part-time. Librarians made up 30% of the sample. Respondents worked on a variety of units with 23% working in Reference, 19% in Technical Services, 24% in Access Services, 5% in Information Technology, 13% in other university services, and 16% in other public services. The average tenure of employment was 12.5 years (ranging between 1 and 31 years, with a standard deviation of 9.1). Age, gender, and ethnicity were not collected, as the library administration felt that this might lead to identification of respondents.

Measures

Role stressors. Role stressors are defined in this study as situations where job expectations are conflicting or ambiguous. Role stressors were measured with a modified version of the Role Stress Scale (Rizzo et al, 1970), which has two subscales: role ambiguity and role conflict. Role ambiguity occurs when it is unclear what actions should be taken to meet the expectations of the role. Role conflict occurs when there are mixed or incompatible messages about how to satisfy expectations for a single role. Role ambiguity was measured with six items (e.g., “I know exactly what is expected of me.”) and role conflict was measured with three items (e.g., “I have to buck a rule or policy in order to carry out an assignment.”). Item responses were on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). For each subscale, individual scores were averaged to create a subscale score. Using data from this sample, the role ambiguity subscale had a Cronbach alpha of .85, and the role conflict scale had a Cronbach alpha of .71, demonstrating that both subscales had acceptable internal consistency.

Coworker support. Coworker support was defined in this study as social support given in a work setting. Coworker support was measured with a coworker support instrument developed by graduate students in a Masters in Industrial and Organizational Psychology program in 2003. The scale was initially found to have a single factor (unpublished data). Coworker support was measured with ten items (e.g., “If I am struggling with a work related problem, my coworkers help me.”). Item responses were on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A total score was created by averaging the responses from the individual items. Using data from this sample, the coworker support scale had a Cronbach alpha of .89, demonstrating that the scale had good internal consistency.

Work engagement. Work engagement was defined in this study as “a positive, fulfilling, work-related state of mind characterized by vigor, dedication and absorption” (Schaufeli, Martinez, et al., 2002, p.465). Work engagement was measured with a modified version of the Utrecht Work Engagement Scale (Schaufeli, Salanova, et al., 2002), which has three subscales: vigor, dedication, and absorption. Vigor was defined as having energy and mental resilience while working. Dedication was defined as a sense of significance, enthusiasm, inspiration, pride and challenge. Absorption was defined as being fully concentrated and happily engrossed in one’s work. Vigor was measured with six items (e.g., “At my work, I always persevere, even when things do not go well.”). Dedication was measured with five items (e.g., “I am proud of the work that I do.”). Absorption was measured with three items (e.g., “When I am working, I forget everything else around me.”). Item responses were on a 5-point Likert scale ranging from 1 (Never) to 5 (Always). For this study, the subscale scores were not used. A total score was created by averaging the responses from all of the individual items. Please see the Factor Analysis section for an explanation and support for using a composite score for the UWES. Using data from this sample, the modified Utrecht Work Engagement Scale (UWES) had Cronbach alphas of .93 for both measures of work engagement (Time 1 and Time 2), demonstrating that the scale had good internal consistency.

Procedure

The present study is longitudinal by design, with data collected from two similar survey instruments. The employees of the library completed an annual attitudinal survey during the Fall of 2003 and the Fall of 2004. This survey was the class project of a graduate class in psychometrics. The entire survey contained 134 multiple-choice questions and four fill-in questions. The survey included items relating to job engagement, role stress, and coworker support as well as items representing many other constructs (facets of job satisfaction, intention to quit, work efficiency, communication climate, team psychological safety, team performance, organizational commitment, perceived organizational support, perceived fairness, and creativity). Demographic items were also included, as well as open-ended questions about the library. Demographic questions included the unit the participant worked at, who the primary employer was, whether or not the participant supervised other employees, whether the participant was a full or part time employee, whether the participant was under 18 years of age, whether the participant worked as a librarian, and how long the participant had been working for their employer. Total time required to complete each survey was between 15 and 20 minutes.

During each data collection period (Fall 2003 and Fall 2004), the psychometrics students contacted the department heads at the library. Surveys were given to the department heads to hand out to their employees. Participants received a cover letter explaining that the graduate class was conducting an organizational survey that was being supported by library administration. Participants were given time during work hours to complete each survey. Participants were also asked to base their answers on their perceptions of the workplace. Completed surveys were placed into pre-addressed envelopes and delivered by interoffice mail to the instructor of the course.

There were small differences between the 2003 and 2004 surveys. The 2004 survey used a different set of coworker support items (not used in this study). Additionally, the 2004 survey asked the degree to which the respondents were satisfied with how management had addressed suggestions made in the previous survey and added an item asking if the 2004 survey was easier to fill out than the 2003 survey. The 2004 survey also assigned a unique code to each respondent (a composite of shoe size, the first three letters of the town they were born in, the first three letters of their mother's first name, and the month and day of their mother's birthday). Unfortunately, there was no code assigned for the 2003 sample.

Participants were matched on the 2003 and 2004 surveys by reviewing their responses to employer, department, supervisory responsibilities, part-time status, librarian, years of service, an item asking if the 2004 survey was easier to fill out than the 2003 survey, and writing samples on the open-ended questions. Participants were considered to be an absolute match if all items matched, a likely match if all items matched but the writing sample was missing, a probable match if all items matched except for one (such as a department change, or supervisory responsibilities that could happen over the course of a year), or no match. The data used in this study represent the absolute matches (n=47), the likely matches (n=14), and the probable matches (n=35). Sixty-six individuals were excluded as no match (no 2003 survey or no matching 2003 survey).

Results

Factor Analysis

Factor analyses were conducted to test the proposed factor structures of the measures used in the present study. To test whether the data supported a two factor solution for role stressors as proposed by Rizzo et al. (1970), a forced two-factor principal components analysis was conducted to verify if role conflict would load on one factor and role ambiguity would load on the other. Direct oblimin method of rotation was used because it was assumed the factors would be related. Factor 1 accounted for 48% of the variance and Factor 2 accounted for an additional 13% of the variance. Pattern matrix loadings of .30 or greater are listed in Table 1. Most items loaded on the appropriate factor with loadings ranging from .42 to .89. Three items, however, loaded on both factors (“I get clear explanations of what has to be done,” “I often have to buck a rule or policy to carry out an assignment” and “I feel certain about how much authority I have”). For these three items, the primary loading was still on the correct factor. Therefore, it was decided to keep the factor structure as proposed by Rizzo et al.

Table 1

Principal Components Factor Analysis of Role Stressors

	Component	
Items	*1*	*2*
Role Conflict		
I have to do things that should be done differently.		.87
I receive an assignment without the manpower to complete it.		.75
I have to buck a rule or policy in order to carry out an assignment.	.38	.54
Role Ambiguity		
I feel certain about how much authority I have.	.41	.33
Clear, planned goals and objectives exist for my job.	.69	
I know that I have divided my time properly.	.81	
I know what my responsibilities are.	.89	
I know exactly what is expected of me.	.80	
I get clear explanations of what has to be done.	.59	.37

An exploratory principal components analysis was calculated for the coworker support items. Direct oblimin method of rotation was used because it was assumed the possible factors could be related. Coworker support had a one-factor solution, accounting for 53% of the variance. All items loaded on the single factor with loadings greater than .40. Table 2 lists items and the individual loadings for coworker support.

Table 2

Principal Components Factor Analysis of Coworker Support

Items	*Component* *1*
If I'm struggling with a work-related problem, my coworkers help me.	.65
My coworkers refuse to assist me.	.78
My coworkers assume my responsibilities when I am absent.	.49
My coworkers listen to my work-related problem.	.75
My coworkers dismiss my work-related suggestions.	.53
My coworkers care about me.	.88
I enjoy working with my coworkers.	.86
My coworkers are mean.	.54
My coworkers appreciate me.	.87
My coworkers take my concerns seriously.	.83

To test whether the data supported a three factor solution for engagement as proposed by Schaufeli, Salanova, et al. (2002), a forced three factor principal components analysis was conducted on the engagement items at T1. Direct oblimin method of rotation was used because it was assumed the three factors would be related. Factor 1 accounted for 54% of the variance, Factor 2 accounted for an additional 10% of the variance, and Factor 3 accounted for an additional 7% of the variance. Pattern matrix loadings of .30 or greater are listed in Table 3. Items did not load on the expected factors. Of particular concern was that all of the dedication items loaded with the vigor items. All of the absorption items loaded on their own factor. A subset of the vigor items loaded on the third factor, perhaps representing perseverance rather than vigor. Other researchers finding similar results (poor factor structure) have collapsed the UWES into one factor (Sonnentag, 2003). Schaufeli, Bakker, et al. (2006) also discuss using a total score for work engagement rather than factor scores, to avoid issues of multicollinearity (due to high correlations between factors). Hallberg et al. (2007) also opted for a one-factor solution. Shimazu et al. (2008) also found that a one-factor solution fit data better for a Japanese speaking sample. Hakanen et al. (2005) used a single index represented by a sum of all items. Simpson (2008) also used a summed total score representing all items. Storm and Rothman (2003) found that a one-factor solution fit the data better in their survey of South African police. Wefald and Downey (2009) also found a one factor solution to be superior to a three factor solution in a study of business students. Xanthopoulou et al. (2009) used an overall work engagement score as well. Hallberg and Schaufeli (2006) in a study of Swedish technology employees decided that a one-factor solution is superior. Therefore, a forced one-factor principal components analysis was performed. The single factor accounted for 54% of the variance, with all factor loadings above .50. Table 4 lists items and their specific loadings. The single factor solution was found to be a better fit for engagement at Time 1.

Similar factor loading issues were found for the engagement measure at Time 2. A forced three-factor principal components analysis was computed on engagement items at T2. Using direct oblimin method of rotation, Factor 1 accounted for 54% of the variance, Factor 2 accounted for an additional 9% of the variance and Factor 3 accounted for an additional 7% of the variance. Pattern matrix loadings of .30 or greater are listed in Table 5. Again, the items did not load on the expected factors. Of particular concern was that most of the dedication items loaded with either vigor items, absorption items, or both. A subset of the vigor items loaded on the third factor, again, perhaps representing perseverance. Five items loaded on more than one factor. As mentioned earlier, other researchers finding similar results (poor factor structure) have collapsed the UWES into one factor. Therefore, a forced one-factor principal components analysis was conducted. The single factor accounted for 54% of the variance, with all factor loadings above .50. Table 6 lists specific loadings. The single factor solution was also found to be more compelling for engagement at Time 2.

Table 3

Principal Components Factor Analysis of Engagement at Time 1

	Component		
Items	*1*	*2*	*3*
Vigor			
When I get up in the morning, I feel like going to work.	.79		
At my work, I feel bursting with energy.	.83		
At my work, I always persevere, even when things do not go well.			.74
I can continue working for very long period of time.			.83
At my job, I am very mentally resilient.	.33		.70
At my job I feel strong and vigorous.	.81		
Dedication			
To me, my job is challenging.	.68		
My job inspires me.	.92		
I am enthusiastic about my job.	.90		
I am proud of the work that I do.	.53		
I find the work that I do full of meaning and purpose.	.67		
Absorption			
When I am working, I forget everything else around me.		.83	
Time flies when I am working.		.55	
I get carried away when I am working.		.84	

Table 4

Principal Components Factor Analysis of Engagement at Time 1 (Single Factor)

Items	*Component* *1*
When I get up in the morning, I feel like going to work.	.85
At my work, I feel bursting with energy.	.75
At my work, I always persevere, even when things do not go well.	.54
I can continue working for very long period of time.	.58
At my job, I am very mentally resilient.	.70
At my job I feel strong and vigorous.	.76
To me, my job is challenging.	.74
My job inspires me.	.83
I am enthusiastic about my job.	.87
I am proud of the work that I do.	.81
I find the work that I do full of meaning and purpose.	.78
When I am working, I forget everything else around me.	.63
Time flies when I am working.	.77
I get carried away when I am working.	.64

Table 5

Principal Components Factor Analysis of Engagement at Time 2

	Component		
Items	*1*	*2*	*3*
Vigor			
When I get up in the morning, I feel like going to work.	.88		
At my work, I feel bursting with energy.	.78		
At my work, I always persevere, even when things do not go well.			.78
I can continue working for very long period of time.			.73
At my job, I am very mentally resilient.	.30		.70
At my job I feel strong and vigorous.	.82		
Dedication			
To me, my job is challenging.	.39	-.53	
My job inspires me.	.70	-.33	
I am enthusiastic about my job.	.86		
I am proud of the work that I do.	.62		
I find the work that I do full of meaning and purpose.	.62	-.42	
Absorption			
When I am working, I forget everything else around me.		-.71	.31
Time flies when I am working.		-.60	
I get carried away when I am working.		-.78	

Table 6

Principal Components Factor Analysis of Engagement at Time 2 (Single Factor)

	Component
Items	*1*
When I get up in the morning, I feel like going to work.	.80
At my work, I feel bursting with energy.	.76
At my work, I always persevere, even when things do not go well.	.62
I can continue working for very long period of time.	.60
At my job, I am very mentally resilient.	.61
At my job I feel strong and vigorous.	.70
To me, my job is challenging.	.64
My job inspires me.	.84
I am enthusiastic about my job.	.84
I am proud of the work that I do.	.80
I find the work that I do full of meaning and purpose.	.81
When I am working, I forget everything else around me.	.64
Time flies when I am working.	.83
I get carried away when I am working.	.68

Descriptive Statistics

The means, standard deviations, correlations and reliabilities of the measured variables are presented in Table 7. Of note, coworker support was highly endorsed (M = 3.9, SD = .58). Role ambiguity was not strongly endorsed (M = 2.60, SD = .75), showing that the typical respondent neither agreed nor disagreed that their role was ambiguous. Role conflict was somewhat endorsed (M = 3.32, SD = .77) showing that there were some concerns over role conflict. Engagement at Time 1 (M = 3.36, SD = .70) was very similar to engagement at Time 2 (M = 3.42, SD = .69). Mean scores of overall engagement show that participants reported typically feeling engaged between some of the time and most of the time.

Pearson correlation coefficients. The bivariate correlations in Table 7 demonstrate that there are statistically significant relationships between all of the predictor and outcome variables. The role stressors are positively related to each other (r = .57, p<.005), but negatively related to coworker support (with role conflict r = -.24, p<.05 and with role ambiguity r = -.35, p<.005). Both role conflict (r = -.20, p<.05) and role ambiguity (r = -.35, p<.005) were negatively related to engagement at Time 2, meaning that as role stressors increased, engagement a year later was more likely to decrease. Coworker support is positively related to engagement at Time 2 (r = .27, p<.05), meaning that as individuals felt more supported by their colleagues, engagement a year later was more likely to increase. As expected, engagement at Time 1 is strongly and positively related to engagement at Time 2 (r = .69, p<.005), meaning the more engaged someone was initially, the more likely they would endorse engagement a year later. Of note, each of the predictor variables (role stressors and coworker support) has a stronger relationship to the concurrent measure of engagement (Time 1) than the engagement measure taken a year later (Time2).

Table 7

Means, Standard Deviations, Correlations, and Reliability Measures

Variable	Mean	SD	1	2	3	4	5
1. Role Conflict (T1)	3.32	.77	**.71**				
2. Role Ambiguity (T1)	2.60	.75	.57**	**.85**			
3. Coworker Support (T1)	3.88	.58	-.24*	-.35**	**.89**		
4. Engagement (T1)	3.36	.70	-.30**	-.48**	.51**	**.93**	
5. Engagement (T2)	3.42	.69	-.20*	-.35**	.27*	.69**	**.93**

*p<.05, **p<.005

Note: Reliability measures (Cronbach's alpha) are in bold on the diagonal.

Hierarchical Moderated Multiple Regression

A hierarchical moderated multiple regression was conducted to test the hypotheses that role stressors could predict job engagement occurring a year later, and that coworker support would moderate the effect of role stressors on work engagement at Time 2. The criterion variable was engagement at Time 2. In the first step, engagement at Time 1 was entered as a baseline or control. In the second step, role conflict at Time 1, role ambiguity at Time 1, and coworker support at Time1 were added. In the third step, the cross products of role conflict and coworker support were added (Table 8). The hierarchical analysis was repeated a second time with the first two steps being identical and cross product of role ambiguity and coworker support added as the third step (Table 9). The two hierarchical regressions were conducted to investigate the impact of each the cross-products separately. Initial analyses showed coworker support as a possible suppressor variable (with correlations showing a strong positive relation between coworker support and engagement and the multiple regression showing a weaker negative relationship between coworker support and engagement). All predictor variables were subsequently centered by subtracting out the mean value. Centered variables were used for the hierarchical analyses.

Hierarchical regression of role conflict and coworker support. Results from this analysis show that the baseline engagement (Time 1) in the first step explained a significant amount of variance in engagement at Time 2 ($R^2 = .48$, $p<.005$), meaning that engagement at T1 was predictive of engagement at T2, thereby supporting Hypothesis 1. In step two of the analysis, after controlling for the baseline engagement, the variables of role conflict, role ambiguity, and coworker support explained little additional variance in engagement ($\Delta R^2 = .01$, $p>.05$). This suggests that after accounting for initial engagement, role stressors and coworker support, on their own, were not predictive of later engagement. Consequently, hypotheses 2 and 3 were not supported. In the third step, the interaction term was added, which also explained little additional variability ($\Delta R^2 = .01$, $p>.05$).

In this final step, engagement at T1 is shown to be predictive of later engagement ($\beta = .73$, $p<.005$). This supports Hypothesis 1, in that early engagement levels are strongly and positively predictive of later engagement endorsements. Role conflict at T1 ($\beta = .01$, $p>.05$) was not predictive of engagement at T2. Hypothesis 2, which stated that role conflict would be negatively related to later engagement, was not supported. Role ambiguity at T1 ($\beta = -.04$, $p>.05$) was not a significant predictor of engagement at T2. Hypothesis 3, which stated that role ambiguity would be negatively related to later engagement, was not supported.

Coworker support was not predictive of engagement at T2 ($\beta = -.15$, $p>.05$). While not statistically significant, the direction of coworker support has changed from positive to negative suggesting a possible suppression effect. Coworker support did not moderate the relationship between role conflict and later engagement ($\beta = -.10$, $p>.05$). Hypothesis 4, which stated that coworker support would moderate the relationship between role conflict and coworker support, was therefore not supported.

Hierarchical regression of role ambiguity and coworker support. Results from this analysis show that the baseline engagement (Time 1) in the first step explained a significant amount of variance in engagement at Time 2 ($R^2 = .48$, $p<.005$), meaning that engagement at T1 was predictive of engagement at T2, supporting Hypothesis 1. In step two of the analysis, after controlling for the baseline engagement, the variables of role conflict, role ambiguity, and coworker support explained little additional variance in later engagement ($\Delta R^2 = .01$, $p>.05$). These results show that after accounting for initial engagement, role stressors and coworker support, on their own, were not predictive of later engagement. Consequently, Hypotheses 2 and 3 were not supported. In the third step, the interaction term was added, which explained an additional 2% of variance in later engagement ($\Delta R^2 = .02$, $p=.05$). Hypothesis 5 was partially supported (coworker support moderated the relationship between role ambiguity at Time 1 and work engagement at Time 2). The nature of the moderation is discussed below.

In this final step, engagement at T1 was shown to be predictive of engagement at T2 ($\beta = .73$, $p<.005$). This again supports Hypothesis 1, in that early engagement levels are strongly and positively predictive of later engagement levels. Role conflict at T1($\beta = .03$, $p>.05$) was not predictive of engagement at T2. Hypothesis 2, which stated that role conflict would be negatively related to later engagement, was not supported. Role ambiguity at T1 ($\beta = -.05$, $p>.05$) was not a significant predictor of engagement at T2. Hypothesis 3, which stated that role ambiguity would be negatively related to later engagement, was not supported.

Coworker support was not significantly related to later engagement ($\beta = -.17$, $p>.05$), but did moderate the relationship between role ambiguity and later engagement ($\beta = .16$, $p=.05$). Figure 1 displays the nature of the interaction. High coworker support did not lead to higher work engagement at T2 among those with high role ambiguity, compared to those with low coworker support. Hypothesis 5 was not supported. In fact, this figure shows that under high role ambiguity, coworker support made little difference. Under low role ambiguity, later engagement levels were lower with high co-worker support than with low co-worker support.

Table 8

Summary 1 of Moderated Hierarchical Multiple Regression Predicting Engagement at T2

Step	Variable	β	ΔR^2
Step 1			.48**
	Engagement (T1)	.73**	
Step 2			.01
	Role conflict (T1)	.01	
	Role ambiguity (T1)	-.04	
	Coworker support (T1)	-.15	
Step 3			.01
	Role conflict x coworker support	-.10	

*p<.05, **p<.005

Note: All β values are reported after all variables have been entered.

Table 9

Summary 2 of Moderated Hierarchical Multiple Regression Predicting Engagement at T2

Step	Variable	β	ΔR^2
Step 1			.48**
	Engagement (T1)	.73**	
Step 2			.01
	Role conflict (T1)	.03	
	Role ambiguity (T1)	-.05	
	Coworker support (T1)	-.17	
Step 3			.02
	Role ambiguity x coworker support	.16	

*p<.05, **p<.005

Note: All β values are reported after all variables have been entered.

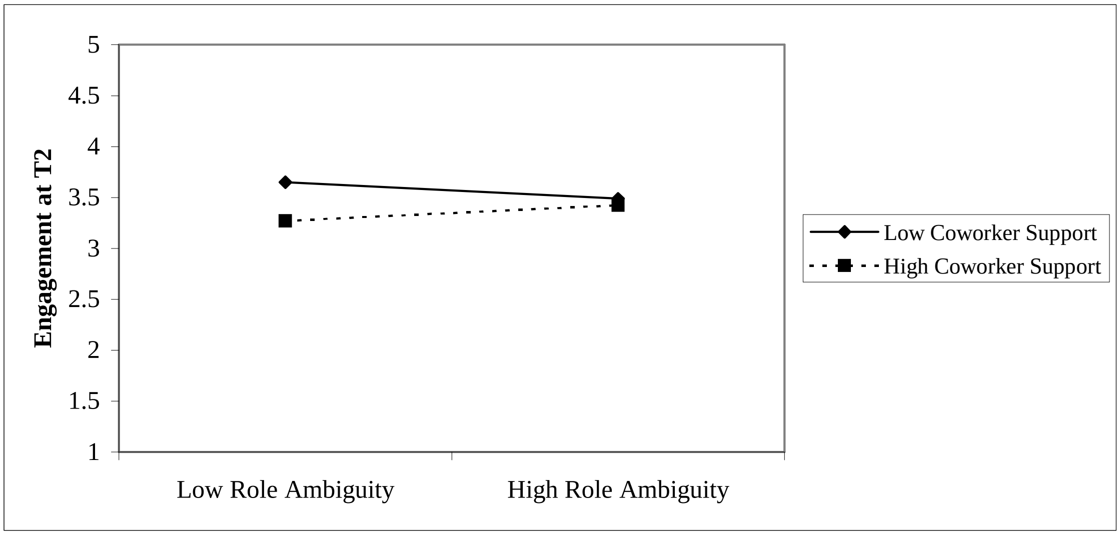

Figure 1. Interaction of Role Ambiguity and Coworker Support on Engagement at T2

Discussion

The main purpose of this study was to investigate the longitudinal nature of work engagement. Previous research on the Job Demands-Resources (JD-R) theory demonstrated that job demands, like role stressors, were negatively related to work engagement. Job resources, like coworker support should be positively related to work engagement. Job resources may play an intrinsic motivational role by increasing employee's growth, learning, and development or play an extrinsic motivational role in achieving work goals (Bakker & Demerouti, 2008). This study advanced past research by adding a longitudinal component to research into JD-R theory and engagement.

Consistent with Hypothesis 1, the present study showed that work engagement at Time 1 was positively related to work engagement at Time 2. Work engagement, in this sample of library employees, appears fairly stable over time. This finding is in line with earlier longitudinal studies of work engagement (Schaufeli, Bakker, et al., 2006; Shimazu, et al., 2008).

The results of the present study did not show support for Hypothesis 2, which stated that role conflict at Time 1 would be negatively and significantly related to work engagement at Time 2. Hallberg and Schaufeli (2006) reported a negative relationship between role conflict and engagement in a cross-sectional study of white-collar professionals. Their finding was not supported in the current study. The lack of the relationship between role conflict and later engagement might be due to the setting of the current study. In the library that this study took place it is quite common for an individual to receive instructions from a supervisor whom he/she does not directly work for. Role conflict is typically understood as having mixed or more than one message about how to satisfy role expectations. This could come from one supervisor or conflicting information could come from multiple supervisors. Employees at this library because of their unique employment arrangements (at a joint public-university library) may not have typical role expectations. They may assume that it is typical to have more than one supervisor giving instructions and developed a tolerance or strategies for dealing with conflicting instructions. Role conflict may not be a critical job demand for these employees. Similarly, role ambiguity was not found to be predictive of later engagement (no support for Hypothesis 3). Role ambiguity occurs when it is unclear what actions should be taken to fulfill role expectations. Schuler et al. (1977) report that role ambiguity typically has a greater negative effect on outcomes than does role conflict. This was not shown in the current study. The impact of role ambiguity may also be diluted due to the unusual work setting.

Lack of support for Hypothesis 4, which stated that coworker support would moderate the relationship between role conflict and later engagement, may be due to the saliency or importance of role conflict as a job demand. The JD-R model proposes that job resources will have more of an impact on work engagement when job demands are high (Bakker, Schaufeli, et al., 2006). As stated earlier, role conflict may not be a critical job demand for these library employees.

Hypothesis 5, which stated that coworker support at Time 1 would moderate the relationship between role ambiguity at Time 1 and work engagement at Time 2, was partially supported. However, it was not the buffering effect that was found. This runs contrary to the buffering responses of job resources as reported by Bakker, Demerouti, and Euwema (2005). Results indicate that high coworker support at T1 might be detrimental to engagement at T2 for those who are low in role ambiguity (compared to those who were low in coworker support). This study was more in line with that of Prieto et al. (2008). They found that after accounting for initial vigor, job demands and resources were no longer predictive of later vigor. Mauno et al. (2007) also reported that lagged effects of most job resources were not significant after accounting for baseline engagement. They stated that the relatively stable nature of engagement could make it difficult to detect predictors of later work engagement in longitudinally designed studies. They recommended increasing the time duration between measurements to more than two years.

The strength of this study is its longitudinal nature. The longitudinal design allowed us to examine changes in engagement over time, as well as assign a direction to the changes (increased engagement at T1 led to increased engagement at T2). It is also one of the first studies to look at JD-R interactions relating to engagement using a longitudinal design.

Limitations and Future Directions

Despite the strengths of the present study, it is not without limitations. First, the library chosen for this study was quite unusual, with both state university and public city library employees working side by side. There are serious issues with equity of pay and benefits that cannot be addressed between the two employers due to conflicting unions.

The staff at this library may not be typical of other library employees. The results of the present study might be due to the nature of the sample.

Second, a significant number of the sample was lost during the matching procedure. The success rate for individuals completing both surveys and getting matched was 59% of 2004 respondents. An estimated 36% of all library employees were surveyed and successfully matched, so the sample used in this study may not be representative of all of the library employees. The sample is limited to those who did not leave the library. Those who quit or otherwise left were not included in the present study.

Third, this project was based entirely on self-report methods. Individuals completing self-report questionnaires may exaggerate, be embarrassed about responding truthfully, or be forgetful. Ideally, there would be objective measures of our variables, completed by independent observers. Such measurements were not available for this study, so subjective self-report instruments were used.

Fourth, the measure of coworker support was created by a graduate class, and had not been used before this study. The validity of this measure is thus not known.

Lastly, the choice of role stressors as demands and coworker support as a job resource may not have been the optimal selection for library employees. There may be other issues or resources that may be more important to library employees. Britt et al. (2005) conclude that the moderating effect of engagement may be different for different kinds of stressors. For example, for our library sample, quantitative overload (having too much to do in the time allotted) might have been a more salient demand. The possibility of autonomous decision making might have been a more salient resource.

Future directions should include a continued emphasis on longitudinal research, but perhaps with other populations. There should be an expanded investigation of different job demands as well as resources for different occupation groups.

Implications

The implications of this study are threefold. First, engagement was found to be stable over a period of one year. Employees who are engaged tend to stay at whatever level of engagement that they are at. If a person is highly engaged, they are likely to be engaged one year later. Conversely, if an individual is not engaged, they are not likely to improve one year later. This stability, while interesting, may make it difficult to conduct longitudinal research into changes in engagement over time. Second, role stressors did not play a significant role in predicting later work engagement. Role stressors may be temporary or transitory, not leaving a lasting impact on engagement. Third, while there was no direct effect for coworker support, it did moderate the relationship between role ambiguity and later work engagement. However, employees receiving high levels of coworker support in the presence of low role ambiguity were likely to be less engaged. This might lead you to conclude that high levels of coworker support can be detrimental especially for people who have clear understanding of their roles and responsibilities.

What are some of the practical implications of this study for managers? First, engagement is relatively stable over time. Engagement scores taken a year earlier predicted 48% of the variability of later engagement scores. This is fairly remarkable. Given the stability of work engagement, if organizations provide job resources and if they increase the job engagement levels of their employees, these employees are likely to still be engaged one year later. This has an important implication for the organizations because employee engagement is related to positive business outcomes (e.g., productivity and revenues).

Targeted interventions should be designed for low engagement individuals, as high-level individuals appear to remain stable. Xanthopoulou et al. (2009) report a lagged effect of a previous day’s coaching on the next day’s work engagement in a study of restaurant workers. So while stable, work engagement can be increased by way of a coaching intervention. Sonnentag (2003) demonstrated that rest from work was also important in predicting later engagement. Making sure that employees are not being overworked (number of hours/continuous days/working every weekend) may be important in improving later engagement. De Lange et al. (2008) found that for individuals who stayed at their place of employment, baseline engagement and job autonomy were predictive of later engagement. Managers may be able to look at ways to make employees feel more in control over work functions and roles. These studies demonstrate that while stable, later engagement can be influenced.

Interpreting the strange moderating effect of coworker support for managers is perhaps more tenuous. It could be argued (but not demonstrated in this study) that individuals who are high in coworker support may be lower in job autonomy. De Lange et al. (2008) found that job autonomy was an important predictor of later engagement. Individuals receiving too much coworker support may not feel the same kind of ownership in a job. If you are struggling with a work-related problem and your coworkers always help you or assist you, when do you get to use your skill set? How do you get to a state of engagement? If coworkers always take on all your responsibilities when you are absent, do you still feel needed by the organization (dedication)? While not arguing for eliminating coworker support, this study would support examining cases of extreme coworker support.

Improving and maintaining work engagement should be an important goal for management as past studies have shown that increased work engagement has been related to increased performance, decreases in turnover, increases in job satisfaction, and increases in proactive behavior, demonstrating that work engagement is an important construct to target for organizational success.

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