

AN EXAMINATION OF JOB ENGAGEMENT, TRANSFORMATIONAL LEADERSHIP,
AND RELATED PSYCHOLOGICAL CONSTRUCTS

by

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B.S., Iowa State University, 1994
M.B.A., Kansas State University, 1996

AN ABSTRACT OF A DISSERTATION

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Abstract

Job engagement is an emerging psychological construct that purports to measure individuals' level of psychological presence at work. The concept has received attention in both the academic literature and in industry. In the academic literature three measures of engagement exist that were examined in this research (Schaufeli, Britt, & Shirom). However, engagement has undergone little critical examination beyond factor analyses. This research sought to critically examine the concept of engagement as well as provide empirical evidence regarding its place in the nomological network of job attitudes. Both theoretically and empirically, engagement has been linked to personality and leadership variables; however, no research to date has attempted to examine all three concepts together. This research additionally sought to link engagement, personality, and leadership in a theoretically based model. Participants (N=382) at mid-sized financial institution completed a survey comprised of demographic items, attitude measures, a leadership measure, and a personality measure. Results indicated that the Schaufeli and Britt measures of engagement substantially overlap with job satisfaction and affective commitment; however, the Shirom measure (called vigor) is not redundant with job satisfaction or affective commitment. Hypothetical models of engagement, personality, and leadership were not good fits with the data; however, two modified models (one with Schaufeli's engagement and one with Shirom's vigor) had marginally acceptable fits. Further, hierarchical regressions indicated a strong connection between engagement and leadership and between engagement and personality. It seems that every so often a "new" concept comes along that offers organizations prosperity with little cost. Engagement is a popular and positive concept that is appealing to both practitioners and academics. Engagement, as a construct, is not a silver bullet for organizations. However, engagement or vigor may be a useful concept for organizations as both a selection instrument and as a way to assess the relative states of fulfillment of employees, groups, and organizations. Future directions for research and recommendations are discussed.

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Table of Contents

List of Figures	viii
List of Tables	ix
Acknowledgements	xi
Dedication	xii
CHAPTER 1 - Introduction	1
History of Engagement	3
Academic Approaches to Engagement	4
Antecedents of Engagement	13
Consequences of Engagement	16
Summary of Findings.....	18
Related Constructs	20
Transformational Leadership	29
Transformational Leadership, Engagement, and Related Psychological Constructs	31
Perceived Organizational Support	33
Job Involvement.....	33
Organizational Commitment.....	35
Intent to Leave	37
Personality.....	37
Personality and Leadership.....	41
Positive and Negative Affect	42
Criticisms of Engagement.....	43
Importance of Engagement.....	45
CHAPTER 2 - Hypotheses	46
CHAPTER 3 - Method.....	49
Participants.....	49
Materials	49
Procedure	53
Analysis.....	54

CHAPTER 4 - Results	56
Summary of findings for each hypothesis	66
CHAPTER 5 - Discussion	69
Recommendations.....	79
Limitations	81
Future directions	82
Summary.....	83
References.....	88
Appendix A - Organizational survey	103
Appendix B - Organizational announcement of survey.....	114
Appendix C - Organizational survey reminder message	115

List of Figures

Figure 1 Hypothesized model of personality, job attitudes, and turnover intentions	116
Figure 2 Alternate model of personality, job attitudes (as correlates), and turnover intentions.	117
Figure 3 Hypothesized model of research variables	118
Figure 4 Hypothesized model of research variables with modifications	119
Figure 5 Second hypothesized model of research variables	120
Figure 6 Second hypothesized model of research variables with modifications	121
Figure 7 Exploratory model of research variables	122
Figure 8 Hypothesized model 1 with vigor as the measure of engagement	123
Figure 9 Model 1 with modifications and vigor as the measure of engagement	124
Figure 10 Hypothesized model 2 with vigor as the measure of engagement	125
Figure 11 Model 2 with modifications and vigor as the measure of engagement	126
Figure 12 Exploratory Model 2 with more modifications and vigor as the measure of engagement	127
Figure 13 Three factor model of engagement (confirmatory factor analysis)	128
Figure 14 Three factor model of engagement (with modifications)	129
Figure 15 One factor model of engagement (confirmatory factor analysis)	130
Figure 16 One factor model of engagement (with modifications)	131
Figure 17 Three factor model of vigor (confirmatory factor analysis)	132
Figure 18 Three factor model of vigor (with modifications)	133
Figure 19 One factor model of vigor (confirmatory factor analysis)	134
Figure 20 One factor model of vigor (with modifications)	135

List of Tables

Table 1 Means, Standard Deviations, & Correlations	137
Table 2 Regression Results for Hypothesis 3	140
Table 3 Regression Results for Hypothesis 4: Personality & Engagement (Schaufeli)	141
Table 4 Regression Results for Hypothesis 4: Personality & Vigor (Shirom)	142
Table 5 Regression Results for Hypothesis 4: Personality & Engagement (Britt).....	143
Table 6 Regression Results for Hypothesis 4: Personality & Engagement (Schaufeli)	144
Table 7 Regression Results for Hypothesis 4: Personality & Vigor (Shirom)	145
Table 8 Regression Results for Hypothesis 5: Engagement (Schaufeli), Job Satisfaction & Personality.....	146
Table 9 Regression Results for Hypothesis 5: Vigor (Shirom), Job Satisfaction & Personality	147
Table 10 Regression Results for Hypothesis 5: Engagement (Britt), Job Satisfaction & Personality.....	148
Table 11 Regression Results for Hypothesis 5: Engagement’s Vigor (Schaufeli), Job Satisfaction & Personality	149
Table 12 Regression Results for Hypothesis 5: Engagement’s Absorption (Schaufeli), Job Satisfaction & Personality.....	150
Table 13 Regression Results for Hypothesis 5: Engagement’s Dedication (Schaufeli), Job Satisfaction & Personality.....	151
Table 14 Regression Results for Hypothesis 5: Engagement (Schaufeli), Job Satisfaction, Affective Commitment, & Personality	152
Table 15 Regression Results for Hypothesis 5: Vigor Sub-Components (Shirom), Job Satisfaction, Affective Commitment, & Personality	153
Table 16 Regression Results for Hypothesis 5: Engagement (Britt), Job Satisfaction, Affective Commitment, & Personality	154
Table 17 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor Variable for Engagement (Schaufeli)	155

Table 18 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor	
Variable for Vigor (Shirom)	156
Table 19 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor	
Variable for Engagement (Britt)	157
Table 20 Regression Weights Analysis: Test of Hypothesis 7	158
Table 21 Regression Weights Analysis: Test of Hypothesis 8	159
Table 22 Regression Weights Analysis: Test of Hypothesis 8	160

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Dedication

This work is dedicated to my wife, Melissa; my two daughters, Mikaela and Cassandra; my parents, Jon and Ruthann; my major advisor, Ron Downey; Jeff Katz; and the psychology faculty and staff at Kansas State University.

CHAPTER 1 - Introduction

The movement of positive psychology, outlined by Seligman and Csikszentmihalyi (2000), was initiated to examine how normal people flourish under relatively benign conditions. The idea was to focus on building positive qualities in life versus repairing negative aspects of life. At the subjective level, positive psychology is about well-being, satisfaction, hope, optimism, flow, and happiness. At an individual level, positive psychology is about positive traits like positive affect and perseverance. At the group level it is about citizenship, civility, and work ethic (Seligman & Csikszentmihalyi, 2000). The goal of positive psychology and its re-focus is that it will give researchers more information about enhancing and enriching lives as well as information about preventing negative outcomes. The positive psychology movement has refocused organizational variables and job attitudes to a more positive perspective. One of those new attitudes is job engagement.

Engagement is an emerging psychological construct that purports to measure how much a person is *into* their job. Engagement is an example of a recent approach to psychology, stemming from the positive psychology movement espoused by Seligman (1999). While there is considerable research on engagement, there is much missing from that body of work. For example, there remain questions as to where engagement lies in the nomological network of antecedents, correlates, and consequences. There are also questions of key antecedents such as the relationship with leadership and the relationship to personality or other trait-like variables. This research seeks to address some of those issues.

Prior to Seligman's call for a refocusing on positive psychology, there was already much work done in this area. Work on job satisfaction, organizational citizenship, positive affect,

organizational commitment, etc. are all examples of well researched constructs that focus on the positive aspects of people and work (Luthans, Avolio, Avey, & Norman, 2007). The first broad goal of this research was to critically examine engagement and other related psychological constructs.

The second broad goal of the current research was to bring together engagement and transformational leadership and to examine how or whether an individual's level of engagement is related to leadership, i.e. the perceived characteristics of his or her leader. Leadership is a concept that is very important to organizations of all kinds. One theory of leadership that has been shown to be linked to many positive individual and organizational outcomes is transformational leadership (Avolio, 1999; Howell & Hall-Merenda, 1999; and MacKenzie, Podsakoff, & Rich, 2001). Transformational leadership was first outlined by Burns (1978) however, the concept was later reformulated by Bass in 1985. It is Bass's version of the theory that has garnered the most attention and been empirically researched.

Further, it was also a goal of this research to examine the role of personality in an individual's level of engagement by determining if engagement is more trait-like or more state-like. Personality has been theoretically and empirically linked to both engagement and leadership (e.g. Wefald, Loo, Downey, & Smith, 2007; Judge, & Bono, 2000; and Judge, Bono, Ilies, & Gerhardt, 2002).

One aspect of engagement, personality, and leadership that has not been directly examined is the possibility that all three constructs might be linked. Macey and Schneider (2008) speculate that personality traits, leadership, and job characteristics would be the main antecedents of engagement. However, little empirical research has examined these relationships. An examination of the literature revealed only one study that directly examined transformational

leadership and engagement (Zhu, Avolio, & Walumbwa, 2007). Further, only two studies linking engagement and personality were found (Shraga, 2007; Wefald, Loo, Downey, & Smith, 2007) and a meta-analytic review of engagement found little research connecting engagement and individual difference variables (Christian & Slaughter, 2007). However, there is considerable research linking transformational leadership and personality and that research is detailed later in this literature review. The fourth broad goal of this research was to examine the relationships between and among personality, transformational leadership, and engagement.

History of Engagement

The construct of engagement was first presented by Kahn (1990). Kahn (1990, p. 694) defined personal engagement as, “. . . the harnessing of organization members’ selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances.” Kahn (1990, p. 694) further defined personal disengagement as, “. . . the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively, or emotionally during role performances.” Despite Kahn’s work on engagement, researchers did not begin examining the construct in depth until research on burnout led to a reintroduction of the concept.

This reintroduction of engagement initially defined the construct as the opposite of burnout. That is, someone who is clearly not experiencing job burnout must be *engaged* in their job (Maslach & Leiter, 1997). The result was that the three factors of burnout received new names and the construct of engagement was applied to the results. The three burnout factors were renamed; emotional exhaustion was changed to high energy, depersonalization became strong involvement, and a reduced sense of efficacy became a sense of efficacy. Renaming the factors of burnout and using the opposite pattern of scores on the burnout measure was seen as a

way to put burnout research in a more positive light. Engagement was then developed from this starting point of burnout. Thus, engagement focuses on the positive aspects of a person's job. This positive focus led to a bottom-up development of engagement in the practitioner community (Macey & Schneider, 2008). This may explain why engagement has so many different definitions and measures. The popularity of engagement in the practitioner community and the reintroduction of engagement in the academic community led to two differing approaches to the concept.

The two broad approaches to engagement involve the academic approach and industry's approach (Macey & Schneider, 2008; Vance, 2006; Wefald & Downey, in press). This research and the literature review will focus on the academic approach to engagement. The two approaches to engagement are quite different, most notably in that the academic approach to engagement focuses on the psychological construct itself, while industry tends to focus on the outcomes of engagement and other, related constructs such as satisfaction and commitment. Industry also tends to focus on group level engagement (aggregating individual engagement scores up to relevant groups). This can be especially important for large organizations with many groups – to compare group engagement levels and to assess how managers are addressing their groups' engagement and performance. Given that the focus of this research is on the academic approach, the industry approach to engagement is not discussed in detail.

Academic Approaches to Engagement

There are four broad approaches to the concept of engagement under the academic approach. The Maslach (Maslach & Leiter, 1997) approach to engagement outlined above suggests that engagement is the opposite of burnout – someone that is clearly not burned out must be engaged in their job. The other three approaches to engagement are Schaufeli (three

factor engagement) (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002), Shirom (vigor) (2003), and Britt (one factor engagement) (Britt, Thomas, & Dawson, 2006). By far the most used measure in academic research is the approach developed by Schaufeli (Christian & Slaughter, 2007). A discussion of these approaches follows.

Currently, there is a debate regarding the construct definition of engagement between those who believe engagement is simply the opposite of burnout and those who believe engagement is more complicated, that it is obliquely related to burnout, but not its opposite (Britt, Castro, & Adler, 2005; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Salanova, et al., 2002; Shirom, 2003). As previously noted, Maslach and Leiter (1997) conceptualized engagement as the opposite of burnout, that is, someone who is clearly not burned out at work must be engaged. However, later research has shown that burnout and engagement are probably obliquely related, but not opposites. Schaufeli and Salanova, et al. (2002) studied students and employees in Spain. They found that a three-factor model of vigor, dedication, and absorption fit the data in both samples. Engagement for both students and employees were measured with similar items. The items were changed by switching job or work with school or academic activities. There was only a weak negative correlation between emotional exhaustion and vigor indicating that they are not opposite ends of a continuum. This would seem to indicate that emotional exhaustion and vigor are different constructs. That is, if they really were opposites, then a stronger negative correlation would be expected. Shin (2003) found similar results with a sample of South Korean workers.

Schaufeli and Salanova, et al. (2002) also broke with the idea that engagement is just the opposite of burnout – an approach first identified by Maslach and Leiter (1997). Schaufeli and Salanova, et al. (2002) suggest two dimensions of work-related well-being: activation (ranging

from low activation – exhaustion to high activation – vigor) and identification ranging from low identification (cynicism) to high identification (dedication). In addition to these two dimensions: burnout includes reduced personal accomplishment and engagement includes absorption (Schaufeli & Salanova, et al., 2002). Schaufeli and Salanova, et al. (2002) defined engagement as a persistent and positive affective-motivational state of fulfillment in employees, characterized by vigor, dedication, and absorption. According to Schaufeli and Salanova, et al. (2002) vigor is seen as high energy, resilience, a willingness to invest effort on the job, ability to not be easily fatigued, and persistence in the face of difficulties. Dedication is characterized by strong involvement in work, enthusiasm, and a sense of pride and inspiration. Absorption is characterized by a pleasant state of being immersed in one's work, time passing quickly, and being unable to detach from the job (Schaufeli & Salanova, et al., 2002). Schaufeli and Salanova, et al. (2002, p. 74) said, "Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior."

In another study using confirmatory factor analysis and three samples of university students, Schaufeli, Martinez, Pinto, Salanova, & Bakker (2002) found that the three factor model of vigor, dedication, and absorption fit best, but that absorption and vigor may be measuring something similar. However, there are some problems with the Schaufeli and Salanova, et al. (2002) and Schaufeli and Martinez, et al. (2002) conclusions. The factor structure for the three-factor model was rather tenuous and the correlations among the three factors were moderate to high; .56 - .89 (Schaufeli & Salanova, et al., 2002) and .65 - .94 (Schaufeli & Martinez, et al., 2002). A recent meta-analytic review of the engagement research also found the three factors of engagement to be very highly related with corrected correlations

ranging from .88 to .95 (Christian & Slaughter, 2007). Vigor and absorption had the strongest mean corrected correlation ($M\rho = .95$; 95% CI - .83 – .97) followed by dedication and absorption ($M\rho = .90$; 95% CI - .85 – 1.0) and finally vigor and dedication ($M\rho = .88$; 95% CI - .84 – .92).

The Schaufeli definition is helpful in differentiating engagement from flow, a similar construct (Schaufeli & Martinez et al., 2002). Job engagement differs from flow in that “. . . flow is a more complex concept that includes many aspects and refers to rather particular, short-term ‘peak’ experiences instead of a more pervasive and persistent state of mind, as is the case with engagement” (Schaufeli & Salanova, et al., 2002, p. 75). In that sense, job engagement can be thought of as a *chronic* and persistent positive affective-cognitive state towards one’s job whereas flow is a more *acute* state lasting for a much shorter period of time and potentially of a more intense nature (Schaufeli & Salanova, et al., 2002).

Shirom (2003) recently critiqued the Maslach and Schaufeli model of engagement by suggesting that the vigor component of engagement is the only non-confounded construct in the three factor engagement model (consisting of vigor, dedication, & absorption). Shirom (2007) defines vigor as an individuals’ feeling that they possess physical strength, emotional energy, and cognitive liveliness. This definition assumes that vigor is a composite variable, comprised of three affective components (Shraga, 2007). The concept of vigor stems from Hobfoll’s Conservation of Resources theory (1998, 2002). Vigor is related to an individual’s energetic resources (cognitive, emotional, and physical). These resources are possessed individually and are all connected and continually influencing each other. Although not empirically tested, Shirom believes the antecedents of vigor may include variables such as being more extraverted, having certain task characteristics (task autonomy, significance, feedback, identity, and skill variety), having multiple roles, group cohesion, and having leaders who encourage employees to

think creatively (Shirom, 2003). This last point suggests, at least theoretically, that leadership is an important antecedent to vigor. Shraga (2007) found support for the suggestion that vigor is related to job satisfaction and job conditions (job significance, meaningful interaction with others, feedback from supervisors, and job identity). Further, Shraga found support for the three factor model of vigor (physical strengths, cognitive liveliness, & emotional energy) using structural equation modeling and comparing one, two, and three factor models. Given that Shirom suggests we should consider engagement a one factor construct defined by vigor, it follows that engagement will also be related to leadership.

The meta-analytic review by Christian and Slaughter (2007) found the factors of engagement were related to job resources, e.g. autonomy, social support, and innovativeness. Two studies (Shraga, 2007; Shraga & Shirom, 2007) found that in tests of the relationship between vigor and job satisfaction, the best fitting model was when job satisfaction recursively predicted vigor (versus vigor predicting job satisfaction or a reciprocal relationship). Shirom's critique of Maslach's definition of engagement is that it has not yet been conceptually validated in empirical research. Shirom also claims that Schaufeli's alternate definition of vigor, dedication, and absorption were not deducted theoretically and including all three in one concept (engagement) has not been investigated in detail. Shirom says that vigor, since it is the only non-confounded construct in the engagement model, should be studied on its own. Shirom also argues that the three engagement factors also seemingly overlap with other, established psychological constructs (absorption with psychological presence at work or flow; dedication with job involvement or organizational commitment; and vigor with motivation and resilience). These critiques of engagement call into question the viability of engagement as a unique psychological construct as it is defined with the three factor model.

Kahn (1992) suggested that other internal states like joy, being content, being optimistic, and having courage can encourage people to engage with their environment. Shirom argues that vigor, a positive affect, is one of those states that can encourage a person to engage with their work environment. He also argued that this is conceptually different than engagement behavior, e.g. exerting extra effort, staying late, helping colleagues, etc.

Judge, Erez, and Bono (1998) reported that positive self-concept is related to job performance and given Shirom's arguments (that engagement and vigor may be related to internal states such as joy and optimism) it seems likely that being engaged at work would be related to having a positive self-concept and performing at a higher level. Shirom argues that vigor is not confounded like dedication and absorption because they overlap with other elements like psychological presence at work and importance of work to one's self image. Shirom claims that vigor and job burnout are obliquely related, i.e. they are not opposites. Demanding work, when those demanding tasks are completed, may make someone feel emotionally exhausted and vigorous at the same time (Shirom, 2003). Shirom's critique highlights the need for more empirical evidence on engagement. Shirom's critique also points to a possible explanation of the seemingly high positive correlations between the three factors of engagement found in the Schaufeli model of engagement. Shirom argues that vigor is the only non-confounded construct of engagement and due to the high correlations between the three factors of engagement in the Schaufeli model it is possible that engagement may actually be a one-factor construct. Britt, Dickinson, Greene, & McKibben (in press) also view engagement as a single (factor) construct. Britt believes that measuring engagement along two or more factors will lead to confusion about which factors are related to the various outcomes of engagement.

Shirom (2003) differentiates engagement behavior from vigor – saying that vigor is a positive affect that facilitates goal-directed or approach behavior. Shirom (2003, p. 13) suggests that vigor is, “an affective state that individuals attribute to their job and workplace when asked about it and do so spontaneously.” Vigor, as conceptualized by Shirom, is different than Schaufeli’s vigor in that the latter refers to attitudes or behavioral responses to adverse events and Shirom’s vigor refers to an affective state (Shirom, 2003; Shraga, 2007). Shraga (2007) reported that vigor could be measured either using the three factors of vigor or as one overall factor. Shraga’s dissertation also suggested that extraversion and openness to new experiences were related to vigor (as predictors). This research suggested that extraverts have been found to be predisposed to experience positive emotions and that openness (characterized by imaginative, exploring, curious, and unconventional) is positively correlated with vigor-like affective states.

Regarding the Schaufeli definition and conceptualization of engagement, Shirom (2003) proposed:

There are specific problems related to each of the components of engagement, as defined by Schaufeli and his colleagues (2002a, b). Absorption, gauging one’s immersion in one’s job, appears to overlap considerably with psychological presence at work, defined by Kahn (1992) to include the elements of being attentive, connected, integrated, and focused on work. Kahn (1992, p. 340) constructed a theoretical model in which psychological presence leads directly to engagement at work, defined in behavioral terms as referring to energetic task performance, being innovative and creative at work, and openly and freely expressing feelings and thoughts. Dedication, yet another component of the Schaufeli et al. (2002a, b) newly conceptualized construct of engagement, appears to overlap with the major dimensions of job involvement, that is, the extent to which a

person identifies psychologically with his or her work and the importance of work to one's total self-image (Brown, 1996). Vigor, as defined by this group of researchers, incorporates considerable extraneous conceptual content in that, in addition to the core meaning of high energy level, it includes motivational elements (e.g., willingness to invest effort) and resilience (e.g., persistence in the face of difficulties). (p. 11-12)

Schaufeli and Salanova (2007) suggest that engagement can be conceptualized as both an individual and collective phenomenon. This means that teams and organizations can be engaged to greater or lesser degrees. This further implies that group psychological processes may be involved in individual work engagement. Team members may become engaged when they converge emotionally with other people. This is similar to emotional contagion where one person "catches" the emotion of another, in this case a high level of engagement. As this happens to more and more people, engagement spreads to the entire team and possibly to the entire organization. Similar processes have been seen with negative states like burnout (Schaufeli & Salanova, 2007). Given this evidence that engagement goes beyond individuals and extends to teams, it is likely that leadership is an important variable for engagement.

The fourth approach to engagement in academics is from Britt (1999). This approach to engagement defines engagement as feeling responsible for and committed to one's work performance so that a person's performance *matters* to the individual (Britt, 1999; Britt & Bliese, 2003). Britt, Dickinson, Greene, and McKibben (in press) suggest that when people are engaged in their work, they feel a sense of personal responsibility for their work performance and that their performance influences their identity. Britt defines engagement as a one factor concept and the items used to measure it examine perceived responsibility for job performance, commitment

to job performance, and whether performance matters to the person (Britt, 1999, 2003; Britt, Adler, & Bartone, 2001; Britt & Bliese, 2003; Britt, Castro, & Adler, 2005).

Britt, Dickinson, Greene, and McKibben (in press) see the outcomes and predictors of engagement differently than other researchers. The Britt conceptualization of engagement emphasizes individuals' feelings of responsibility for performance and caring about the outcomes of their performance and that engagement is a motivational state created by beliefs of personal responsibility and caring. Britt views vigor, physical exertion, attention, effort, and absorption as outcomes of engagement. Further, Britt views the multi-factor conceptualizations of engagement as inherently confusing. He notes that using a multi-factor conceptualization would make it difficult to tease out which aspects of engagement were related to specific outcomes. For these reasons, Britt considers engagement a single factor construct and measures it with a single scale.

Britt, Castro, and Adler (2005) found that soldiers who were more engaged in their jobs were able to ward off the effects of stress and reported lower levels of negative consequences when they were working long hours and were doing difficult work. However, the same soldiers that were more engaged reported more negative consequences from work overload when they were faced with stressors that interfered with their ability to perform their jobs well. This evidence creates a more complex view of engagement.

Being highly engaged at work may have negative consequences as well as positive consequences – highly engaged employees will have higher performance, more commitment, and lower turnover when they have the resources and aptitudes to do their jobs, but they may have the opposite when there are roadblocks to doing their jobs and performing well (Britt, Dickinson, Greene, & McKibben, in press). Britt et al. define engagement differently than other

academic researchers. As noted earlier, they refer to self-engagement as “...feeling a sense of responsibility for and commitment to a performance domain so that performance “matters” to the individual (p. 1476).” The main difference in how Britt et al. view engagement is that their view of engagement is more complex than the notion that higher engagement is always good and lower engagement is always bad – that being highly engaged can have negative consequences as well as positive consequences. Britt suggests that when workers are self-engaged, i.e. workers that are highly motivated to do well, they can quickly lose their enthusiasm and motivation if they begin to perceive their work as less meaningful or if they think they can not succeed in their job (due to lack of resources, lack of support, etc.) (Britt, 2003).

In summary, the four approaches to engagement in academics include the Maslach burnout model (Maslach & Leiter, 1997), the Schaufeli three factor engagement model (Schaufeli & Salanova et al., 2002), the Shirom vigor model (2003), and the Britt one factor engagement model (Britt, Thomas, & Dawson, 2006). So far none of the four approaches has come to dominate the field either as a definition or as a methodology. However, the Schaufeli measure and approach to engagement is by far the most used measure in academic research (Christian & Slaughter, 2007).

Antecedents of Engagement

Schaufeli and Salanova (2007) have suggested that possible antecedents include job resources and positive home experiences, but they also suggest that emotional contagion and motivation play a role in engagement and group-level engagement. So far research points to a reciprocal relationship between resources, engagement, and positive outcomes. As discussed earlier, the evidence provided by Schaufeli and Salanova regarding group-level engagement suggests that leadership may be an important variable for engagement.

Following from this line of thought is the idea that leaders can influence followers' levels of (state) engagement. Aguilar and Salanova (2005) found that leaders high in task and support behavior were better able to increase individual engagement than leaders who displayed other patterns of leadership behavior. Shirom (2003) has suggested that having leaders who encourage employees to think creatively is an antecedent to vigor. Job resources have been shown to be an antecedent of engagement and for some jobs those resources can be influenced by a group's leader (Christian & Slaughter, 2007). In their meta-analytic review Christian and Slaughter (2007) found that the vigor component of the Schaufeli engagement model was related to autonomy, feedback, social support, and innovativeness and that the relationships were moderate and positive. They also found moderate and positive relationships between dedication and autonomy, social support, and innovativeness. Absorption was also related moderately and positively to job resources (autonomy and social support) (Christian & Slaughter, 2007).

Kahn (1990) also proposed that contextual factors and environmental conditions such as job characteristics, social support, and organizational norms influence the way individuals engage with their work. Empirical research has supported these ideas (that contextual factors such as job resources are antecedents to engagement) (Hallberg & Schaufeli, 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006; Schaufeli & Bakker, 2004). Bakker, Hakanen, Demerouti, and Xanthopoulou (2007) reported that job demands and resources moderate the relationship between teachers' engagement and demanding interactions with students. Job demands are physical, social, or organizational aspects of a job that put strain on an employee due to sustained effort. Job resources are physical, psychological, social, or organizational aspects of the job that reduce demands, help with achieving work goals, or stimulate learning or growth. Job resources include things like salary, career opportunities, interpersonal or social relations, role clarity,

performance feedback, and skill variety (Bakker et al., 2007). The literature has also supported the link between situational factors and motivation via Job Characteristics Theory and Conservation of Resources Theory (Hackman & Oldham, 1975; Hobfoll, 1989). Job Characteristics Theory (Hackman & Oldham, 1975) posits that skill variety, task identity, task significance, autonomy, and feedback are resources that facilitate motivational states and the presence of those resources has been shown to predict job satisfaction, motivation, and decreased absenteeism and turnover (Freid & Ferris, 1987). Conservation of Resources Theory (Hobfoll, 1989) suggests that individuals are motivated by both job resources and the desire to maintain and increase those resources.

Shraga (2007) found support for job characteristics as antecedents to vigor. Shraga found that job enrichment (e.g. job significance, supervisor feedback, job identity, and skill utilization) and perceived control all had positive relationships with vigor. This research further highlights the idea that job context and job resources are important antecedents to vigor and provides theoretical evidence that leadership could influence vigor assuming the leader has the capacity to influence job enrichment and perceived control for employees.

A link between personality variables and vigor was reported by Shraga (2007). Shraga found that extraversion and openness to new experiences were related to vigor (as predictors). Shirom (2003) and Macey and Schneider (2008) have also speculated that there is a theoretical link between personality variables and engagement (or vigor). Shirom speculated that vigor would be related to a person's level of extraversion. Macey and Schneider speculated that trait-like engagement was the same as trait positive affect.

A recent article by Avery, McKay, and Wilson (2007) suggests that social identity and self-categorization may have something to do with job satisfaction and engagement. This

research found that employees who are satisfied with their coworkers were also more engaged in their work. This study utilized one of the measures of engagement that was developed from the practitioner community. That measure is called the Gallup Workplace Audit or the Q12 and was developed by the Gallup Organization (Avery, McKay, & Wilson, 2007). The Q12 includes items that directly ask about satisfaction and satisfaction with coworkers. This work ties in with research by Harter, Schmidt, and Hayes (2002) who utilize the same engagement scale. The research also found that age similarity was more important for older workers (over age 55) such that age similarity and engagement were more closely linked for that group. Similarity to one's work peers and how one sees oneself in the work environment also seem to play a role in job engagement.

Consequences of Engagement

Schaufeli and Salanova (2007) suggest some of the possible consequences of engagement include positive job attitudes, individual health, and extra-role behaviors such as organizational citizenship behaviors. When people who are more engaged in their jobs are compared to those who are less engaged, the more engaged people have higher job satisfaction, are more committed to the job, and have lower turnover intentions (Christian & Slaughter, 2007; Schaufeli & Salanova, 2007). Higher engagement people also exhibit personal initiative, proactive behavior, and learning motivation and engagement may mediate the relationship between job resources and those positive organizational behaviors (Salanova & Schaufeli, 2005; Sonnentag, 2003). All of these factors are things organizations look for and foster in employees. In addition to those behaviors (initiative and proactive behaviors) people who are more engaged work more overtime (Beckers, Van der Linde, Smulders, Kompier, Van Veldhoven & Van Yperen, 2004).

Empirical evidence has shown a negative relationship between engagement and turnover intentions (Hallberg & Schaufeli, 2006; Schaufeli & Bakker, 2004) and a positive relationship between engagement and organizational commitment (Hallberg & Schaufeli, 2006; Llorens et al., 2006). Christian and Slaughter (2007) suggest that the empirical evidence linking engagement and job performance is lacking. The only related evidence showing any kind of link between engagement and performance are the following two studies. Schaufeli and Martinez et al. (2002) found a positive relationship between engagement and academic performance and Harter, Schmidt, and Hayes (2002) found a positive relationship between engagement (as measured with the Gallup Workplace Audit) and group-level performance.

Christian and Slaughter (2007) found that dedication and vigor were related to organizational commitment and that the strongest relationship was between the dedication component of the Schaufeli engagement model and organizational commitment. Christian and Slaughter (2007) also suggest that engagement is an indicator of employee well-being given that engagement is negatively related to burnout and burnout has been shown to be related to stress and psychological health (Maslach & Leiter, 1997). Broadly, Christian and Slaughter (2007) found support for a positive relationship between engagement and health (comprised of constructs related to physical well-being such as health problems, somatic complaints, and psychosomatic health). Christian and Slaughter (2007) found that dedication and vigor were also related to health and that vigor and health had the stronger relationship of the two.

One question that has been somewhat neglected in the research is whether a person can experience too much engagement. Britt reported that when highly engaged individuals are not given adequate resources to perform to their expectations, then their motivation to work crashes further than those with more moderate levels of engagement (Britt, Castro, & Adler, 2005).

According to Schaufeli and Salanova (2007), engagement and workaholism are not related to each other. Schaufeli, Taris, and Van Rhenen (2005) reported that the vigor and dedication components of engagement had weak negative correlations with the compulsiveness component of workaholism, but that absorption correlated weakly and positively with the excess work component of workaholism. Schaufeli, Taris, and Van Rhenen (2005) also reported that workaholism and engagement were related to different variables – both types of employees exert extra effort and are committed to the organization, but for workaholics the costs associated with the commitment and effort are the individuals' mental health and social contacts outside of work. Engaged workers, on the other hand, feel good mentally and socially (Schaufeli, Taris, & Van Rhenen, 2005). These findings suggest engagement is not related to workaholism and that higher levels of engagement are not necessarily a bad thing (assuming adequate resources are provided to employees).

Summary of Findings

So far it is not clear whether engagement meets the criteria of a unique psychological construct, but there is hope, with further research, that it may prove to be unique and useful in the field of organizational behavior and human resources. Several questions need to be answered first. What is the definition of engagement? Clearly researchers have not settled on a single definition of engagement, nor have they settled on a single measure of engagement. This does not necessarily prevent engagement from being regarded as a real psychological construct. Job satisfaction has several different definitions and measurements, but they are all similar.

One approach to engagement that academics has not taken is to examine engagement at the group level, i.e. aggregating individual levels of engagement to relevant groups. Academics has primarily focused on individual assessment in engagement research. This omission makes

sense given that engagement is an individually measured variable. However, research in industry has given focus to group level engagement to the benefit of organizations. In our view, engagement can and should be measured at the individual and group levels, especially in industry. Aggregating individual levels of engagement across work groups and the entire organization has real benefits for management. This is especially true if engagement surveys are measured periodically, which is often done in industry.

Research has demonstrated several outcomes of higher levels of engagement. Harter, Schmidt and Keyes's (2002) recent meta-analysis revealed a relationship between engagement and retention, profitability, productivity, and customer satisfaction. They suggested that engagement can be increased by utilizing behaviors that increase positive emotions. These positive emotions in turn lead to positive behaviors on the job. This suggests that engagement is actionable and it may very well be so. Job satisfaction is also actionable in that sense and there is clearly a relationship between engagement and satisfaction. Harter, Schmidt, and Keyes (2002) suggest that engagement is actionable in a way that satisfaction is not; however, it seems likely that the same behaviors that develop and foster higher levels of engagement would also increase satisfaction.

Theoretically, engagement and satisfaction are distinct constructs, although there is some overlap in the definitions of the two constructs – namely affective reactions to the job are present in both definitions. The framing of both concepts under job attitudes puts a burden on the newer concept of engagement to demonstrate its differentiation from satisfaction. In this framework it is important to determine if engagement adds to our understanding of job attitudes and the prediction of important outcomes such as performance.

Recent research has suggested that job satisfaction is a mediator between antecedents, e.g. internal factors such as personality and external variables such as job characteristics, and consequences, e.g. withdrawal and citizenship behaviors (Crede, Chernyshenko, Stark, Dalal, & Bashshur, 2007). Engagement has been shown to be a predictor of student performance (Schaufeli & Martinez et al., 2002), employee performance (Corporate Leadership Council, 2004; Harter, Schmidt, & Hayes, 2002; Shull, 2006), and morale (Britt, Dickinson, Moore, Castro, & Adler, 2007). Assuming engagement and satisfaction are distinct constructs, we would expect engagement to uniquely predict outcomes, e.g. student and employee performance, above and beyond other similar constructs. Some of our own research suggested a great deal of overlap between engagement and satisfaction and that engagement did not add any incremental validity beyond that of satisfaction (Wefald & Downey, in press). Further work is needed to see how engagement relates to other established job attitudes such as organizational commitment and job involvement.

Related Constructs

Other ideas under the positive psychology movement are similar to engagement and deserve mention here. Positive emotions in employees are beneficial both to the individual and to an organization. Organizations and individuals care about performance, health of employees, and decision making; all of which have been associated with positive emotions. Positive emotions at work are related to higher supervisor evaluations and higher pay (Staw, Sutton, & Pelled, 1994). Positive emotions may also protect a person's physical and mental health (Fredrickson, 1998). Positive emotions are also related to better decision making, increased problem-solving skills, and the use of heuristics (Robbins & Judge, 2006, p. 282).

Fredrickson (1998) focuses on four positive emotions: joy, interest, contentment, and love. These four emotions broaden an individual's momentary thought-action repertoire and they build an individual's personal resources (physical, intellectual, and social). Fredrickson's broaden-and-build theory posits that positive emotions broaden people's thought-action repertoires such as flight or fight and this encourages people to discover novel lines of thought or action. For example, joy creates the desire to play and interest in something creates the desire to explore (Fredrickson & Joiner, 2002). As people discover new ideas and actions, they build their physical, intellectual, social, and psychological resources. Positive emotions also broaden attention and cognition (which enable flexible and creative thinking) and predict broad-minded coping (e.g. thinking of new ways to solve problems) (Fredrickson & Joiner, 2002). Engagement is a positive state-like concept that is similar to the concept of positive emotions, however, engagement is considered to be more of a chronic state than positive emotions. Theoretically, positive emotions could lead to or enhance one's engagement with work.

Contrasted with positive emotions is the more stable positive affect. Dispositional affect has been shown to be positively related to favorable work outcomes (Wright & Staw, 1999). Research done by Wright and Staw (1999) took aim at the happy-productive worker hypothesis. Extensive research has shown that job satisfaction either has no relationship with performance (Iaffaldano & Muchinsky, 1985) or a small to moderate relationship at best (Judge, Bono, Thoresen, & Patton, 2001). Because of these findings, research on the relationship between happiness and performance or productivity was sparse. It was research on positive emotions, the broaden-and-build theory, and other similar ideas that re-ignited interest in the happy-productive worker relationship. Wright and Staw (1999) found mixed support for the happy-productive worker hypothesis. They found that state affect was not related to performance, but that trait

affect was related to performance. They describe a pleasantness-based dispositional affect as being predictive of performance evaluations. Similar research done by Cropanzano, James, and Knovsky (1993) showed that both dispositional positive and negative affect were related to job attitudes. Dispositional positive affect was positively related to satisfaction, commitment, and performance and negatively related to turnover intentions. The relationship between positive affect and turnover intentions was mediated by satisfaction and commitment. Negative affect was also related (with opposite pattern of relationships from positive affect) to satisfaction, commitment, turnover intentions, and performance. This research shows the importance of both positive and negative affect in predicting work outcomes and attitudes and it also highlights the importance of trait variables.

Engagement has been linked with both state-like and trait-like concepts. The various definitions of engagement refer to the concept as a state-like concept. Schaufeli and Salanova, et al. (2002) define engagement as a persistent and positive affective-motivational state of fulfillment in employees, characterized by vigor, dedication, and absorption. The Schaufeli definition explicitly says the concept is a state, however, it also refers to positive affect (which can be conceptualized as either a state or a trait). Shirom (2003) defines vigor as physical strength, cognitive liveliness, and emotional energy, but further he says vigor is a positive affect that facilitates goal-directed or approach behavior and that vigor is related to an individual's energetic resources. This definition could imply either a state or a trait – positive affect is often considered both a state and a trait. And ones' energetic resources could be stable among individuals or it could be influenced by the environment or both. Britt (1999) defines engagement as feeling responsible for and committed to one's work performance so that a person's performance *matters* to the individual. This definition does not clearly say whether

engagement is a state or trait. Macey and Schneider (2008) reported that psychological states are, by definition, bounded by time. However, the time frames surrounding engagement are rarely explicitly referred to and they seem to suggest a durable state. The appropriate conceptual boundaries for the duration of state engagement and adequate operationalization of those boundaries have not been proposed or examined in detail (Macey & Schneider, 2008). Macey and Schneider (2008) write, “Within the notion of a “mind-set,” engagement can be considered a relatively enduring state... that serves to explain persistence as well as direction of job and organizationally focused behavior.” (p. 13). They also propose that engagement can be a transient state where levels of engagement can fluctuate in response to the work context and components of a person’s personal life. Macey and Schneider suggest that engagement measures bound survey items in time, specifically asking participants how frequently they have engagement feelings and how long they persist. Sonnentag (2003) reported that engagement (as measured by the Schaufeli three-factor scale) varied around an average (trait) level and that variations in state engagement could be explained by off-work recovery opportunities.

Wefald, Loo, Downey, and Smith (2007) found a relationship between both Schaufeli’s engagement scale and Shirom’s vigor scale and personality (Big Five Factors) in a sample of university students. Shirom (2003) also speculated that the antecedents of vigor may include being more extraverted – a trait concept. The descriptors used in the PANAS are similar and sometimes the same as those used in measures of engagement, e.g. attentive, alert, enthusiastic, inspired, proud, determined, strong, and active (Macey & Schneider, 2008). Macey and Schneider also suggest that trait positive affect is a precise definition of an engaged person, i.e. being energetic and enthusiastic. Further, trait engagement and trait PA may in a sense *frame* a person’s experiences at work and in part determine how a person responds to those experiences.

Other research that is related to engagement includes work done on psychological well-being, a construct that includes both state and trait-like aspects. Wright, Cropanzano, and Meyer (2004) found that psychological well-being and negative moods were predictive of job performance. Psychological well-being is a concept that is characterized in terms of the overall effectiveness of a person's psychological and social functioning. Psychological well-being, similar to engagement, has been considered both a state and trait-like construct, however, it is more often thought of as a stable trait-like construct. Dysfunctional psychological well-being has been associated with depression, loss of self-esteem, hypertension, and drug consumption and these outcomes of dysfunctional well-being have been linked to many undesirable work outcomes, it makes sense that functional well-being is related to desirable work outcomes such as increased performance (Wright, Cropanzano, & Meyer, 2004). Wright, Cropanzano, and Meyer (2004) did find that psychological well-being is predictive of job performance. They also found that negative mood was negatively related to performance. This research shows that both state and trait measures are important predictors of work performance and that organizations should consider *how* to use both situational and dispositional strategies to increase employee performance, e.g. focusing on traits in selection and states in management of current employees (Wright, Cropanzano, & Meyer, 2004).

The distinction between psychological states and traits is a point of some argument. Allport and Odbert (1936, p. 13) defined traits as, "...broad patterns of determining tendencies that confer upon personality such consistency as it displays." And, "Consistent and stable modes of an individual's adjustment to his environment. Obvious examples are *aggressive, introverted, sociable*." (p. 26). They define states as (p. 26), "Present activity, temporary states of mind and mood." Examples of states are abashed, gibbering, rejoicing, frantic. In essence, states are

variable behaviors and traits are stable behaviors (Allen & Potkay, 1981). Allen and Potkay (1981) suggest that the distinction may be an arbitrary one. For example, some people may be engaged all the time (trait) and others may be capable of being engaged, but only in certain situations, contexts, or environments (state). In each case a person may be engaged in their work, but for different reasons.

Another view of states and traits assumes that states can be measured the same way as traits and that states are seen as short-term, continuous, concrete ways of acting, feeling, and/or thinking. So a specific behavior in one moment of time represents a certain level of a trait, e.g. behaving in a very outgoing manner at a party represents high extraversion at that specific time. This is what Fleeson (2001) means when he says behavior can be characterized as trait relevant states. In any given situation, certain traits are more or less relevant for expression. Fleeson shows that, over time and across situations, people express the full range of traits – in certain situations a person may behave in an extraverted way and in other situations may behave in an introverted way. However, a person's mean trait relevant state is stable and predictable. And so is the (within person) variability of a person's range of behaviors to a slightly lesser degree. Some people are more susceptible to environmental cues and those people have a more variable distribution of behaviors.

Many organizations consider job satisfaction as a measure of how happy their employees are in their jobs. Indeed, job satisfaction has been studied extensively by psychologists and others (Fritzsche & Parrish, 2005). Job satisfaction, as a construct, is differentiated from engagement, however, when measured, they are related. Both job satisfaction and job engagement are measures of affect regarding a person's job. Job satisfaction has been defined by Locke (1976) as a pleasurable or positive emotional state that results from an appraisal of one's

job and job experiences or from the perception that a job fulfills a person's needs and the perception that the job fulfills important job values. Hulin and Judge (2003) suggest that job attitudes are cognitive evaluations of social objects and that job satisfaction is an emotional reaction to a job resulting from comparisons (evaluations) of actual outcomes with desired outcomes.

The job engagement construct seems to have been more focused on the cognitive-affective motivation at work over long periods of time – the main difference between engagement and satisfaction is that engagement places a greater emphasis on the cognitive aspect of involvement with job tasks whereas satisfaction focuses primarily on affect. Engagement deals with a person's energy on the job (vigor), their dedication to the work, and their level of absorption in the actual work (Schaufeli & Salanova, et al., 2002).

Theoretically, engagement and satisfaction are distinct constructs, although there is some overlap in the definitions – namely affective reactions to the job are present in both definitions. The framing of both concepts under job attitudes puts a burden on the newer concept of engagement to demonstrate its differentiation from satisfaction. In this framework it is important to determine if engagement adds to our understanding of job attitudes and the prediction of important outcomes such as performance. Wefald and Downey (in press) used a hierarchical regression to determine if the engagement construct added any unique variance to the prediction of student performance and it did not. Kahn (1992) proposed that psychological presence (engagement) can be draining in terms of effort and thus may not be maintained over sustained periods of time. The way Kahn proposed the concept of engagement suggested psychological presence, activation, and extra behavioral energy and those concepts are part of the definition or measure of job satisfaction (Macey & Schneider, 2008).

Recent research has suggested that job satisfaction is a mediator between antecedents, e.g. internal factors such as personality and external variables such as job characteristics, and consequences, e.g. withdrawal and citizenship behaviors (Crede et al., 2007). The psychological constructs of engagement and satisfaction at work are applicable to students in that students' *jobs* typically involve their school work. Engagement has been shown to be a predictor of student performance (Schaufeli & Martinez et al., 2002) and employee morale (Britt et al., 2007). Job satisfaction has also been linked positively with engagement (Wefald & Downey, in press) and negatively with turnover intentions (Blau, 2000; Keller, 1984; Piasentin & Chapman, 2007). Assuming engagement and satisfaction are distinct constructs, we would expect engagement to uniquely predict outcomes, e.g. student performance, above and beyond other similar constructs.

Engagement is a concept that is similar to, yet distinct from, morale. Britt et al. (2007) consider morale a positive psychological construct and they note its problems with a solid definition. Morale is a concept that is difficult to define and is often simply described by saying employees are happy, committed, motivated, and will not leave the organization. Britt et al. (2007) define morale as the level of motivation and enthusiasm for achieving organizational goals. Morale was measured with four items asking about personal morale, motivation, energy, and drive (to assess motivation and energy which Britt considers the foundation of morale). They differentiate morale from an emotional state such as psychological well-being and positive affect or from a cognitive state of mind such as being satisfied. Britt et al. (2007) suggest that morale is predicted by working conditions and leadership behaviors that provide individuals with purpose, meaningfulness, confidence, and/or optimism. They also suggest that engagement is a predictor of morale and indeed found a significant relationship between morale and engagement ($r = .29, p < .01$). Morale and engagement were also distinct as shown by the results of a

confirmatory factor analysis and engagement was a significant predictor of morale. This study provides evidence that engagement is a distinct and meaningful concept.

Another study that examined whether or not engagement is distinct from other, similar concepts was done by Hallberg and Schaufeli (2006). This study focused on engagement, job involvement, and organizational commitment. A confirmatory factor analysis was used to examine whether the three constructs were distinct. They noted the conceptual differences of the three constructs. Hallberg and Schaufeli (2006, p. 120) highlight the idea that engagement focuses on optimal functioning at work in terms of well-being and that engagement develops, “as a function of the same job resources that fuel motivation.” Hallberg and Schaufeli (2006) also note the problems with job involvement, both in terms of its definition and measurement. They also point to Kanungo’s (1979) definition as the most supported – a cognitive, psychological identification with work. Organizational commitment (specifically affective commitment) is conceptually different in that it focuses on an emotional attachment employees form with their organization. All three concepts (job engagement, job involvement, and organizational commitment) embrace a positive attachment to work and they all have reciprocal, theoretical references to each other (Hallberg & Schaufeli, 2006). In this light the three concepts will invariably share some variance, but will be distinct from each other. The results of this research suggested that the three concepts are distinct. The intercorrelations ranged from .35 to .46, indicating from 12% to 21% shared variance. The confirmatory factor analysis suggested that the concepts were distinct with the three factor model having a better fit than the one factor model. Engagement and commitment were related to health variables, but involvement was not. This provided some evidence that engagement and involvement are tapping into separate constructs. One interesting finding in this study was that the intercorrelations of the three

engagement factors ranged from .88 to .99. Other research has also found high intercorrelations between the three factors of engagement in the Schaufeli model (e.g. Christian & Slaughter, 2007; Schaufeli & Salanova; 2007). The authors note a one factor interpretation of engagement is supported by these results.

In summary, the existing literature has shown that engagement is related to positive job attitudes, individual health, and extra-role behaviors. However, the link between engagement and job performance is unsupported at this point. The antecedents of engagement may include trait variables such as personality and trait affect, job resources, and positive home experiences (Christian & Slaughter, 2007; Schaufeli & Salanova, 2007; Shraga, 2007). However, the literature does not definitively answer the question of whether engagement is a unique construct or not. One of the problems the literature review revealed was the confusion on whether engagement is a state or a trait. Some of the definitions suggested it was a state concept and others alluded to it being related to trait variables. Specifically, proposed antecedents included job resources and leadership (Christian & Slaughter, 2007; Macey & Schneider, 2008; Schaufeli & Salanova, 2007; Shirom, 2003). Further, the idea that engagement can be measured at the group level and may also be a collective phenomenon (Schaufeli & Salanova, 2007) suggests that leaders may play an important role in engagement. The relationship between engagement and personality has not been fully explored in the published research except for one exploratory study (Christian & Slaughter, 2007; Wefald et al., 2007).

Transformational Leadership

Leadership is a broad and often confusing concept. There are many theories of leadership, some with very little empirical backing. One theory that has considerable theoretical and empirical backing is transformational leadership.

James McGregor Burns (1978) developed the idea of transformational leadership in a book on political leadership. He distinguished between transforming leaders (who appeal to the moral values of followers and attempt to raise their consciousness about ethical issues and get them to reform organizations) and transacting leaders (who use rewards and punishments to incent followers to do what the leader wants them to do, e.g. pay and benefits in exchange for work). Bass (1985) later reformulated the theory of transformational leadership and his approach has been the focus of empirical research. Bass broke down transformational and transactive leadership into specific behaviors (Yukl, 2006). Transformational leadership includes four types of behaviors: idealized influence (behavior that arouses strong emotions from followers and identification with the leader), individualized consideration (providing support, encouragement, and coaching), inspirational motivation (communicating an appealing vision and using symbols to focus effort, and modeling appropriate behaviors), and intellectual stimulation (increasing follower awareness about problems and getting followers to solve those problems in new ways). Transactional behaviors include three types of behaviors: contingent reward (clarification of work and tasks to obtain rewards and using incentives to influence motivation), active management by exception (looking for mistakes and enforcing rules to avoid mistakes), and passive management by exception (using contingent punishments and other corrective action for deviations from acceptable behavior) (Yukl, 2006).

Judge and Piccolo (2007) recently conducted a meta-analysis of transformational leadership and its relationship with leadership criteria which included follower job satisfaction, follower leader satisfaction, follower motivation, leader job performance, group or organization performance, and rated leader effectiveness. The overall validity of transformational leadership and leadership criteria was .44, closely followed by contingent reward leadership with a validity

of .39. However, contingent reward leadership had significantly higher validities for follower job satisfaction and leader performance. Transformational leadership had significantly higher validities for follower satisfaction with leader and leader effectiveness, while transformational leadership and contingent reward were not significantly different for follower motivation and group or organization performance (Judge & Piccolo, 2007).

Transformational leadership has also been shown to be related to personality variables. A recent meta-analysis suggested a positive relationship between extraversion and transformational leadership and a negative relationship between neuroticism and transformational leadership (Bono & Judge, 2004). However, overall the relationships were somewhat weak; personality explained, "...12% of the variability in charisma and only 5% and 6% of the variability in ratings of intellectual stimulation and individualized consideration, respectively." (Bono & Judge, 2004, p. 906).

Subjective well-being (SWB) is a broad construct that is often used interchangeably with happiness (Luthans, Youssef, & Avolio, 2007). SWB as a construct involves feelings of emotional well-being (e.g. positive and negative affect and life satisfaction), psychological well-being, and social well-being and has been linked with positive work outcomes. Further, SWB has been conceptually linked with the concept of engagement (Harter, Schmidt, & Hayes, 2002). SWB has also been linked with transformational leadership. Research has shown that transformational leadership has a positive effect on SWB (Arnold, Turner, Barling, Kelloway, & McKee, 2007). This relationship was mediated by the meaning people ascribe to their work, suggesting that good leaders may have a more positive influence on how people ascribe meaning to their work.

Transformational Leadership, Engagement, and Related Psychological Constructs

Aspects of transformational leadership are theoretically related to state engagement. Both concepts encompass conceptualizations of investment of identity in the organization and work, passion for work, the capacity to think independently, develop new ideas, and challenge convention (Macey & Schneider, 2008).

Transformational leadership and psychological well-being have also been studied recently. Arnold, Turner, Barling, Kelloway, and McKee (2007) found a partial and a full mediation (in two studies) of meaning ascribed to work between transformational leadership and psychological well-being. The correlation between transformational leadership and psychological well-being was $.57$ ($p < .01$). Both studies indicated that transformational leaders have a positive impact on the psychological well-being of their followers (Arnold et al., 2007). Given the similarities between psychological well-being and engagement, it is likely that transformational leadership will also have an impact on engagement.

A more recent study looking at transformational leadership and engagement directly was done by Zhu, Avolio, and Walumbwa (2007). This research operationalized engagement using an industry scale developed by the Gallop Corporation (the Q12). Broadly, they found that leader-rated follower characteristics moderated the positive relationship between transformational leadership and follower engagement such that as leaders rated their followers more positively, the relationship between transformational leadership and engagement was stronger. They also found a significant positive direct relationship between transformational leadership and engagement ($r = .58$, $p < .01$). This study lends support to the idea of the individualized consideration component of transformational leadership – the idea that leaders should pay close attention to the needs and preferences of their followers. This study was not able to assess causality, however, due to using a cross-sectional design.

This research also focused on various constructs theoretically and empirically related to engagement. Those constructs include perceived organizational support, job involvement, organizational commitment, intentions to leave the organization, and personality. Those constructs and their relationships to engagement and leadership are reviewed below.

Perceived Organizational Support

Perceived organizational support (POS) is a concept developed by Eisenberger and his colleagues (Eisenberger, Huntington, Hutchison, & Sowa, 1986). POS stems from the idea that a person's commitment to an organization is strongly influenced by that person's perception that the organization is committed to them. The basis for POS is social exchange since employment is often seen as an exchange of effort and loyalty for money and possibly social rewards. POS is conceptually similar to organizational commitment (Eisenberger, Fasolo, & Davis-LaMastro, 1990). POS is a general perception that a person's organization cares for and values them (Eisenberger et al., 1990). POS has been found to be negatively related to absenteeism (Eisenberger et al., 1986), but positively related to innovation, affective commitment, and conscientiousness (Eisenberger et al., 1990). A later study by Eisenberger, Cummings, Armeli, and Lynch (1997) performed a confirmatory factor analysis on the POS items and job satisfaction items. The combined model had a poor fit, while the separate model had a good fit suggesting that POS and job satisfaction are related, but distinct constructs.

Job Involvement

A concept very similar to engagement is job involvement, first identified by Lodahl and Kejner (1965). However, others had referred to ego involvement at work such as McGregor in 1944 and Allport in 1947 (Lodahl & Kejner, 1965). Lodahl and Kejner (1965, p. 25) defined job involvement as, "...the degree to which a person's work performance affects his self-esteem."

Kanungo (1982a) suggested that this definition of job involvement confused the issue of involvement with motivation and that the items of the measure developed by Lodahl and Kejner assessed both involvement and intrinsic motivation. Kanungo (1982a) further suggested that the research on job involvement often confused the actual psychological construct of involvement with its antecedents and consequences (similar to the problems with research on job engagement). Kanungo (1982a) suggests that there is a specific involvement for the job and a more general involvement for the overall work context. Work involvement is how a person feels about work in general and is a normative belief based on a person's personal history. Job involvement is specific to a person's current job (Kanungo, 1982a). Job involvement is seen as a cognitive state of psychological identification. Kanungo (1982b, p. 33) defines job involvement as, "...the degree to which individuals identify psychologically with their jobs." The antecedents of job involvement that have been suggested are the presence and activation of intrinsic needs at work, autonomy, job variety, and participative management. The correlates of job involvement that have been suggested are job satisfaction, performance, absenteeism, and intent to leave the organization (Kanungo, 1982b).

Hundreds of studies have been done on job involvement and it has been seen as being key to motivation and giving companies competitive advantage (Brown, 1996). Brown (1996, p. 235) suggests that increasing job involvement can enhance productivity by, "...engaging employees more completely in their work and making work a more meaningful and fulfilling experience." Brown's article (a meta-analysis of job involvement research) suggested that Kanungo's definition and scale of job involvement is the clearest and most precise. Brown's model of job involvement suggested the antecedents of the construct are personality variables; certain job characteristics such as autonomy, skill variety, and feedback; certain supervisory

variables such as consideration and participation; and role ambiguity or role conflict.

Consequences of involvement were identified as effort, performance, absenteeism, turnover, job satisfaction, organizational commitment (this may also be an antecedent, however, typically a person first becomes involved in a job, then develops commitment to the organization), turnover intentions, stress, and life satisfaction (Brown, 1996).

Brown (1996) conducted a meta-analysis on job involvement and its antecedents, correlates, and consequences. Antecedents with significant relationships to job involvement broadly included personality variables, job characteristics, supervisory behaviors, and role perceptions. Correlates with significant relationships included demographic variables (age, tenure, education, sex, and salary) and work and career commitment. Consequences with significant relationships included overall performance, absenteeism, turnover, effort, satisfaction, organizational commitment, work-family conflict, job stress, and life satisfaction. This model of job involvement is similar to the hypothesized model of engagement developed by Macey and Schneider (2008) where engagement is predicted by traits, leadership, and job characteristic variables and the consequences include pro-social behaviors, performance, and reduced turnover, turnover intentions, and absenteeism.

Organizational Commitment

Organizational commitment has been defined as a psychological link between a person and the organization he or she works for. This link makes it less likely that the employee will leave the organization (Allen & Meyer, 1996). Organizational commitment is reflected in three general concepts: affective attachment to an organization, perceived costs of leaving the organization, and a sense of obligation to stay with the organization (Allen & Meyer, 1990).

Affective attachment or affective commitment is when a person feels a strong emotional

connection to an organization and they identify with the organization, are involved in the organization, and they enjoy being a member of the organization. The perceived costs of leaving the organization are those costs a person feels they would incur if they left such as loss of income, loss of benefits, and loss of promotional opportunities. Allen and Meyer (1990) refer to this as continuance commitment. A sense of obligation to stay at an organization is referred to as normative commitment and is a sense of responsibility, loyalty, or a belief that staying is the right thing to do (Allen & Meyer, 1990).

Employees who feel competent and comfortable in their roles at work are often affectively committed to their organization. Those who feel there is a lack of available alternatives beyond their existing job often have higher continuance commitment (Allen & Meyer, 1990). Job satisfaction is often related to affective commitment (positively, r ranges from .50-.64) and normative commitment (weak positive relationship), but typically only weakly and negatively related to continuance commitment. Affective and normative commitment are correlated with job involvement in the .3 to .5 range. Affective commitment has also been shown to be positively related to positive affect and negatively related to negative affect, which was to be expected (Allen & Meyer, 1996). Transformational leadership is positively related to affective commitment (r 's range from .39-.45) and normative commitment (.14-.17). All the commitment sub-scales have been shown to be negatively related to turnover intentions as well as actual turnover (Allen & Meyer, 1996). Affective commitment has also been positively related to work performance and the correlations range from negative and non-significant to moderately strong positive correlations. Avolio, Zhu, Koh, and Bhatia (2004) reported a weak, but significant relationship between organizational commitment and transformational leadership ($r = .15, p < .05$).

Recently, Solinger, van Olffen, and Roe (2008) reported that the three-component model of organizational commitment had problems. They noted that affective commitment was the only facet of the three-component model without substantial problems. They reported that continuance commitment often correlated slightly negatively with affective commitment and with other work-related outcome variables suggesting a lack of convergent validity. Normative commitment, on the other hand, correlates very strongly with affective commitment; suggesting that it may not be necessary. For these reasons, affective commitment was the focal facet from the organizational commitment model. However, all three facets were measured.

Intent to Leave

Turnover is often predicted, not surprisingly, by a person's intention to leave the organization (Keller, 1984). Keller (1984) found that intentions to leave were significantly related to performance ($r = -.17$), absenteeism ($r = .15$), age ($r = -.24$), tenure ($r = -.16$), and job satisfaction ($r = -.23$). Keller also performed a multiple regression and intent to leave predicted turnover and significantly added to the r -squared value over and above that of performance and absenteeism, although those were the two strongest predictors. Blau (2000) also found that intent to leave the organization was negatively related to job satisfaction and was predicted by job and organizational context. Theoretically then, engagement or a lack of engagement may predict intentions to leave the organization.

Personality

The Big Five taxonomy of personality is a systematic framework for distinguishing and naming different types and characteristics of people and it provides five replicable, broad dimensions of personality (John & Srivastava, 1999). The Big Five Factor model makes three basic claims: First, normal personality can be characterized in terms of five broad factors:

- Extraversion or Surgency – Sociability, unrestraint, assertiveness, activity-adventurousness
- Emotional Stability or Neuroticism – Irritability, security, emotionality
- Agreeableness - Warmth-affection, gentleness, generosity, modesty-humility
- Conscientiousness – Orderliness, decisiveness-consistency, reliability, industriousness
- Openness to new experience or Intellect – Intellect, imagination-creativity, perceptiveness

Secondly, many existing measures of personality assess, to varying degrees of success, some or all of these five factors. Finally, looking at these five dimensions is a good way to measure personality (Hogan, 1996).

Personality is typically measured using self-report measures and as Hogan (1996) says, the psychological processes that govern a person's responses to items on a personality test are the same as the processes that govern a person's response to questions in an interview and to questions during any social interaction.

People's behavior is a function of their personalities and we use that behavior to make inferences about the kind of person we are dealing with. "Behaviors are high fidelity, narrow bandwidth expressions of personality dispositions." (Hogan, 1996, p. 147). Personality measures are relatively stable over time, well-constructed personality measures are valid predictors of job performance (especially contextual performance), they are nondiscriminatory (also Hogan, Hogan, & Roberts, 1996), and have relatively fewer shortcomings than many other personnel selection tests (Hogan, 1996). Hogan et al. (1996) also reported that intentional distortion of answers (faking) does not appear to affect the criterion-related validity. Ones and Viswesvaran (1998) also found that social desirability does not affect the validities of personality testing for

personnel selection. Specifically, they found that social desirability does not moderate the criterion-related validity of personality.

Johnson (2003) claims that a person's personality is an example of an indirect determinant (of performance) that the individual brings to the organization, along with abilities, interests, education, and experience. Direct determinants of performance include declarative knowledge, procedural knowledge and skill, and motivation (Campbell, 1990 & Campbell, McCloy, Oppler, & Sager 1993). A person's personality can only influence their performance through its influence on the direct determinants of performance. People higher on Conscientiousness, for example, may tend to acquire more declarative or procedural knowledge necessary for job performance (Johnson, 2003). Motivation is an important mediating variable between personality and job performance (Johnson, 2003). This follows the classic equation of $\text{ability} * \text{motivation} = \text{performance}$. Johnson (2003) proposed a model of the relationship between personality and job performance where ability and personality variables both affect performance, but they are both mediated by declarative knowledge, procedural knowledge and skill, motivation, and work habits.

Organizations should care about personality because organizations are comprised of people and organizations should be concerned with the best way to organize and manage people to achieve the goals of the organization (Hogan, 2004). If people have stable traits, then maximizing organizational outcomes requires knowing something about people and their personalities (Hogan, 2004).

A series of meta-analyses, such as Barrick and Mount (1991) and Tett, Jackson, and Rothstein (1991), supporting the link between personality and job performance caused an increase in the popularity of personality tests in employment selection (Hogan, 1996). Barrick

and Mount (1991) looked at the relationship of the Big Five to three job performance criteria; job performance, training performance, and personnel data. They found that Conscientiousness was a valid predictor for occupational groupings with an uncorrected mean validity of .13 and an estimated true correlation of .22. The other personality factors had the following uncorrected and estimated correlations respectively: Extraversion (.08 & .13), Emotional Stability (.05 & .08), Agreeableness (.04 & .07), and Openness to Experience (.03 & .04). Extraversion was a valid predictor of sales and managerial jobs with an estimated correlation of .18 and .15 respectively. Extraversion was also a valid predictor of training performance with an uncorrected and estimated correlation of .15 and .26. Openness to Experience was also a valid predictor of training performance with an uncorrected and estimated correlation of .14 and .25 (Barrick & Mount, 1991). Barrick and Mount's (1991) conclusion was that Conscientiousness was a valid predictor of job performance in all the jobs studied and for all criterion types. The results regarding Conscientiousness were not surprising to Barrick and Mount (1991) because Conscientiousness measures traits such as playful, organized, hardworking, persistent, and achievement oriented which are all traits that are good to have in any job. Two of the Big Five traits, extraversion and conscientiousness, have also been shown to predict employee absenteeism (a negative organizational outcome) (Judge, Martocchio, & Thoresen, 1997).

Ones and Viswesvaran (2001) say that the Big Five Factor model of personality has provided a workable taxonomy that has facilitated meta-analyses and those meta-analyses have brought about a resurgence of research and application of the Big Five Factor model. Usually personality tests in the workplace are either designed for particular job families (job focused) such as managers, sales, clerical workers, etc. or to predict certain criteria (criterion focused) such as violence at work or employee theft. Ones and Viswesvaran (2001) also report that

personality measures produce incremental validity to personnel selection systems when they are combined with measures of general mental ability, although general mental ability is the single best predictor of performance.

This research began with four broad goals. The first goal of this research was to critically examine engagement and other, related psychological constructs. The second goal of the research was to examine the relationship between engagement and transformational leadership. The third goal was to examine how personality and engagement were related. Lastly, this research hoped to link engagement, personality, and leadership. Previous research has shown a link between personality and leadership. That research is discussed below.

Personality and Leadership

Judge, Bono, Ilies, and Gerhardt (2002) did a qualitative review of personality traits and leadership and a meta-analysis on the relationship of personality and leadership. They found the following correlations between personality and leadership: Neuroticism ($r = -.24$), Extraversion ($r = .31$), Openness to Experience ($r = .24$), Agreeableness ($r = .08$), and Conscientiousness ($r = .28$). Extraversion was the most consistent trait that correlated with leadership in the various settings and with various leadership criteria. The overall correlation of the Big Five with leadership was .48 suggesting that personality is an important variable in leadership research ($R = .39 - .53$). These findings are contrary to what many people believe about personality and leadership, i.e. that personality and leadership are not related at all (Judge et al., 2002). It is also possible that situational factors moderate this relationship such as task structure, intrinsically satisfying tasks, and situational control (Judge et al., 2002). In another study, Judge and Bono (2000) found that extraversion and agreeableness positively predicted transformational leadership, openness to experience was positively correlated with transformational leadership,

and neuroticism and conscientiousness were not related to transformational leadership. The overall correlation between the five-factor model and transformational leadership was .40 (corrected for measurement error). The strong association between agreeableness and transformational leadership is speculated to be related to the individualized consideration and charisma components of transformational leadership. Both individualized consideration and charisma emphasize the importance of trust, compassion, and empathy, which are part of the agreeableness factor of personality (Judge & Bono, 2000). Bono and Judge (2004) did a meta-analysis on the relationship between personality and ratings of transformational leadership and found that extraversion was related to all the dimensions of transformational leadership, although the relationship was relatively weak with a correlation of .24. A regression analysis of all five personality traits as predictors of six dimensions of transformational leadership behavior (idealized influence/inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management by exception-active, and management by exception-passive/laissez-faire) showed that charisma had the strongest relationship with personality (Bono & Judge, 2004). These studies bolster the evidence between extraversion and transformational leadership, but suggest more research is needed with regards to the other traits.

Rubin, Munz, and Bommer (2005) also found support for the idea that personality (as measured by the Big Five personality factors) is related to leadership. They found that increased levels of extraversion positively strengthened the relationship between emotion recognition and transformational leadership behavior. These references to leadership and personality suggest – quite categorically – that there is a relationship between a person’s personality and their leadership ability.

Positive and Negative Affect

Positive and negative affect have been associated with a wide range of variables including extraversion (positive affect), anxiety/neuroticism (negative affect), pleasurable engagement (positive affect), unpleasurable engagement (negative affect), and satisfaction (positive affect) (Watson, Clark, & Tellegen, 1988). Macey and Schneider (2008) show that the descriptors used in the PANAS are similar and sometimes the same as those used in measures of engagement, e.g. attentive, alert, enthusiastic, inspired, proud, determined, strong, and active. Further, Schaufeli's definition of engagement includes the term positive affect (i.e. a *positive affective*-motivational state characterized by vigor, dedication, and absorption). They further suggest that trait PA is a precise definition of an engaged person, i.e. being energetic and enthusiastic. Differentiating engagement from satisfaction, Macey and Schneider (2008) suggest that satisfaction is a function of pleasant affect experiences at work and engagement would be indicated by trait PA more so than satisfaction (as an evaluation of positive experiences) and that trait engagement and trait PA would in a sense *frame* a person's experiences at work and in part determine how a person responds to those experiences.

Criticisms of Engagement

The positive psychology movement does have its critics. Fineman (2006) outlines several problems with the positive psychology movement. They include the idea that the field benefits from research on both positive and negative constructs; a focus on positivism is a reflection of North American cultural norms (individualism, optimism, and self-confidence); and if there are certain traits or states that are regarded as positive, then people who fail to fit into a positive model may be stigmatized. Fineman (2006) also suggests that in the workplace, too much of a focus on promoting positive aspects of work may be seen as manipulative or they may actually become manipulative on the part of managers or HR departments. Meyer and Gagné

(2008) suggested that efforts to increase employee engagement could be mismanaged and that those efforts could threaten psychological needs by asking for higher levels of engagement than some employees are capable of providing. Lazarus (2003) also suggested that it is difficult to separate positive and negative aspects of human life and that research on both the positive and negative will lead to a complete picture. An example of this is research looking at peoples' capacity to bear negative emotions or tolerate depression (Lazarus, 2003).

Work on job satisfaction, organizational citizenship, positive affectivity, organizational commitment, etc. are all examples of well researched constructs that focus on the positive aspects of work and employees (Luthans, Avolio, Avey, & Norman, 2007). Luthans et al. (2007) recently suggested a specific way positive psychology should be integrated with the study of organizational behavior and human resources. In their article on psychological capital, they suggested that for psychological constructs to be included in their psychological capital idea (which consists of self-efficacy, hope, optimism, and resilience) they had to meet certain criteria. Those criteria are that the construct must be grounded in theory and research, utilize a valid measurement, add something unique to organizational behavior, be state-like and open to development and change, and finally have a positive impact on performance and satisfaction (Luthans, et al., 2007). Theoretically engagement could be held to similar standards. It might be beneficial to generalize those criteria and look at whether engagement is grounded in theory and research, utilizes a valid measurement, adds something unique to the field of organizational behavior, whether it is state-like and open to development, and lastly whether engagement offers anything beyond that of similar constructs such as satisfaction, commitment, and involvement. The last criterion is different than Luthan's criteria, but is relevant for engagement since it is conceptually similar to satisfaction.

Engagement is a word that is part of the common lexicon. Most people can readily understand the concept of engagement when it is used in a work context. However, that does not mean engagement meets the criteria of a psychological construct.

Importance of Engagement

From a Human Resources perspective dealing with current employees, it makes sense to focus on state-like qualities and situational variables and from a selection perspective it makes sense to focus on more stable or trait-like variables. Wright, Cropanzano, and Meyer (2004) suggest that moods or states are more important for understanding absenteeism, prosocial behavior, and job satisfaction than stable traits. Further, they note that organizations may be able to manage employee moods and in turn increase job satisfaction. One way they suggest doing this is to introduce humor into the workplace. From a selection perspective, it makes more sense to focus on stable traits and select only those individuals who are psychologically well or have the disposition to engaged, energized, or satisfied.

It is important to understand both theoretically and practically where engagement fits in the nomological network of job attitudes along with antecedents and consequences. It is also important to gain an understanding of how and where engagement ranks among more established job attitudes. Engagement is also an important topic of study because little research has been done using hierarchical regressions and relative weights analyses. Engagement has speculatively been related to trait-like constructs (Shirom, 2003) and this research directly examines that issue.

Marvin Dunnette wrote a very prophetic article in 1966 about fads in psychology. In it he describes fads, fashions, and folderol. Fads are short lived ideas that quickly fade away. Fashions are manners or modes of action that become a norm in the field. Folderol was defined by Dunnette as useless ideas that sometimes come in the form of new names for old ideas. The

concept of engagement may fall under any one of these three ideas or none at all. Hopefully, this research (and future research) will help untangle whether engagement is a distinct and meaningful construct in psychology.

The literature review has attempted to cover the history of engagement, academic approaches to engagement, consequences of engagement, how engagement is related to other constructs, criticisms of engagement, and a review of the constructs to be examined in this research. Several important questions have either been ignored to this point or have been weakly covered. These questions are the focus of this research and its hypotheses. The hypotheses listed below also seek to replicate some of the findings from past research.

CHAPTER 2 - Hypotheses

1. It is hypothesized that a model with personality facets and leadership predicting engagement (Wefald et al., 2007; Zhu, Avolio, & Walumbwa, 2007) and engagement predicting job satisfaction and affective commitment and those constructs predicting intentions to leave will have a satisfactory fit (see Figure 1). That is, personality facets (extraversion, conscientiousness, neuroticism, openness, & agreeableness) and transformational leadership will have a direct effect on engagement. Engagement will have a direct effect on job satisfaction and affective commitment and those two variables will have a direct effect on turnover intentions. Theoretically trait variables should predict state variables such as job attitudes (e.g. engagement) and contextual variables (e.g. leadership) should also predict state variables in employees (Macey & Schneider, 2008).

2. An alternative model is also predicted to have a reasonable fit. Engagement has been considered both a predictor of other job attitudes, such as job satisfaction and affective commitment, and a correlate of those constructs (see Macey & Schneider, 2008; Wefald & Downey, 2007; Harter, Schmidt, & Hayes, 2002; Schaufeli & Salanova, 2007; Christian & Slaughter, 2007). As such the alternative model predicts that personality and transformational leadership will have a direct effect on engagement, job satisfaction, and affective commitment and those constructs will have direct effects on intentions to leave (see Figure 2).
3. Engagement will not offer additional unique variance to the prediction of turnover intentions beyond that of job satisfaction and affective commitment. This hypothesis is more speculative based on previous research dealing with job satisfaction (Wefald & Downey, in press). However, job satisfaction has been linked to turnover intentions and that provides the theoretical basis for this hypothesis (Keller, 1984).
4. Personality will significantly predict job engagement as measured by all three engagement scales (Shraga, 2007; Wefald, Loo, Downey, & Smith, 2007). Wefald, Loo, Downey, and Smith (2007) found a sizable relationship between both Schaufeli's engagement scale and Shirom's vigor scale and personality (Big Five Factors) in a sample of university students. Shraga (2007) also found a positive relationship between vigor and extraversion and openness to new experience (as predictors). Given the relationships found between personality and the Schaufeli engagement scale and the Shirom vigor scale, it is hypothesized that similar relationships will be found with the Britt engagement scale, given all three scales measure very similar constructs.

5. It is hypothesized that after controlling for demographics, personality, positive affect, and job satisfaction; engagement, in its various forms, will not add unique variance to the prediction of turnover intentions (Wefald & Downey, in press). Job satisfaction and engagement are redundant both theoretically and when examining the items of both measures. This hypothesis is made because of the overlap of the measures – the engagement measures do not actually tap into anything that is not already covered by job satisfaction.
6. It is hypothesized that after controlling for demographic variables and personality, followers' reports of their direct report's level of transformational leadership will significantly predict engagement. Previous research has found a link between transformational leadership and engagement, however, personality was not included as a control variable (Zhu, Avolio, & Walumbwa, 2007).
7. A relative weights analysis will show that the global (or one-factor) measure of engagement as proposed by Schaufeli et al. will have a higher relative weight than the Shirom vigor measure or the Britt engagement measure. This hypothesis is more exploratory – so far no research has examined the three measures together. However, the Schaufeli measure has more support in the literature and is more widely used in the academic study of engagement (Christian & Slaughter, 2007).
8. A relative weights analysis will show job satisfaction to have a stronger relationship with turnover intentions than engagement. Although not directly tested with a dominance/relative weights analysis, Wefald and Downey (in press) found that engagement did not add any unique variance above and beyond that of job satisfaction

using a student sample in a hierarchical regression with student performance as the criterion.

CHAPTER 3 - Method

Participants

Participants included 382 employees and managers at a mid-sized financial institution. Participants were identified by the management of the organization from two lines of business. A total of 671 participants were identified by the organization and those participants were sent surveys electronically. Four hundred and fifty one people accessed the survey; however, 69 people did not complete the survey and were eliminated from the analysis for a total sample size of 382 and a 57% response rate.

In addition to the major study variables, the survey consisted of demographic items suggested by the organization to remain consistent with previous surveys and previously published scales (see Appendix A). The participants included 22.2% who self-identified as managers. The sample was 51.4% male and the ages of the participants were; under 25 (1.9%), 25-35 (22.3%), 36-45 (28.3%), 46-55 (33.8%), and over 55 (12.7%). The education levels of the participants were as follows; high school/GED (6.2%), some college (32.9%), 4 year college BA/BS (44.5%), Master's (10.8%), and professional or doctoral degree (5.7%). The tenure of the participants at the organization were; less than 1 year (7.7%), 1-3 years (17.9%), 4-10 years (36.1%), 11-19 years (24%), and 20 years or more (14.3%).

Materials

Perceived organizational support was measured using items from Eisenberger et al.'s (1986) scale. The original scale reported a reliability (Cronbach's alpha) of .97 (Eisenberger, et

al., 1986). This scale had eight items measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Sample items included, “My organization really cares about my well-being.” and, “Even if I did the best job possible, the organization would fail to notice.”

Job involvement was measured using Kanungo’s (1982a) scale. The scale included 10 items measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Kanungo (1982a) reported the reliability of this scale to be .85. Sample items include, “The most important things that happen to me involve my work.” and, “I live, eat, and breathe my work.”

Intent to leave was measured using a combination of Keller’s intent to leave scale (1984) and Blau and Holliday’s (2006) scale. Keller’s intent to leave scale (1984) had a reported reliability of .67, so it was combined with Blau and Holliday’s (2006) intent to leave scale (with a reported reliability of .91) in an effort to improve the reliability of the scale. Each scale was comprised of three items for a total of six items. Sample items include, “I intend to leave the XXX profession as soon as possible” and “I expect to leave for another company within the next year.” Items were measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree).

Transformational leadership was measured using a short measure of transformational leadership called the Global Transformational Leadership scale (GTL) (Carless, Wearing, & Mann, 2000). Items were measured using a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Sample items include, “My supervisor communicates a clear and positive vision of the future.” and, “My supervisor gives encouragement and recognition to staff.” The GTL has shown strong convergent validity with other, established measures of transformational leadership such as with the Multifactor Leadership Questionnaire (MLQ) and the Leadership

Practices Inventory (LPI). The correlations between the GTL and the MLQ and LPI range from .76 to .88 with a mean of .83 and a standard deviation of .04 (Carless et al., 2000). Carless et al. (2000) found a coefficient alpha (Cronbach's alpha) of .93 suggesting the GTL is a reliable measure.

Organizational commitment was measured using a shortened version of an organizational commitment scale from Allen & Meyer (1990). The original scale had eight items per sub-scale. The shortened version used in this study consisted of four items for each sub-scale and all three sub-scales were measured as well as the overall scale. The four items had the highest factor loadings from the Allen & Meyer study (1990). The reported coefficient alphas (Cronbach alphas) ranged from .73 to .86 (Allen & Meyer, 1990). Items were measured using a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Sample items included: Affective commitment – “This organization has a great deal of personal meaning for me.” Continuance commitment – “It would be very hard for me to leave my organization right now, even if I wanted to.” Normative commitment – “I think people these days move from company to company too often.”

Both positive and negative affect were measured using the PANAS (Watson, Clark, & Tellegen, 1988). The scale asks participants to indicate the extent to which they generally feel like certain words. The general PANAS scale has been reported to be reliable with coefficient alphas of .88 for PA and .87 for NA and test-retest correlations of .68 for PA and .71 for NA – eight weeks apart (Watson, Clark, & Tellegen, 1988). The directions intentionally used “in general” in the directions because the focus of this research was to assess trait affect as opposed to state affect. Sample words include “interested,” “distressed,” “excited,” and “upset.” Items

were measured using a 5-point Likert type scale (1 = very slightly or not at all and 5 = extremely).

Personality was measured using John and Srivastava (1999) 44-item Big Five Index (BFI) measure of the big five personality factors (Extraversion, Conscientiousness, Emotional Stability, Agreeableness, & Openness to Experience). John and Srivastava (1999) reported reliabilities ranging from .75 to .90 for the five sub-scales. The directions of the survey asked participants if they agree or disagree if they see themselves as someone who, e.g. is talkative, tends to find fault with others, does a thorough job, is inventive, and is reserved. Items were measured using a 5-point Likert type scale (1 = very slightly or not at all and 5 = extremely).

Engagement was measured with two different, published scales. The first scale was a short version of the Utrecht Work Engagement Scale (UWES) from Schaufeli & Salanova et al. (2002) called the UWES-9. This scale included 9 items measured using a 7-point Likert type scale (1 = Never to 7 = Always, everyday). Schaufeli and Salanova (2007) reported that the shortened version of the UWES has had reliabilities ranging from .7-.8. Sample items included: Vigor – “At my work, I feel that I am bursting with energy.” Dedication – “I am proud on the work that I do.” Absorption – “I get carried away when I’m working.”

The second published engagement scale utilized was a four item scale by Britt, Thomas, and Dawson (2006) measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Britt, Castro, and Adler (2005) reported a reliability of .91 for this engagement scale. Sample items included, “I feel responsible for my job performance.” and “I am committed to my job.”

Vigor was measured using Shirom’s (2003) scale which consists of 12 items with 4 items for each factor of vigor (Physical strength, Emotional energy, & Cognitive liveliness). Shirom

(2003) reported reliabilities of .72 for cognitive liveliness, .88 for emotional energy, and .95 for physical strength. Sample items included: Physical strength – “I feel I have physical strength.” Emotional energy – “I feel able to show warmth to others.” Cognitive liveliness – “I feel I can think rapidly.” Items were measured on a 7-point Likert type scale (1 = Never or almost never to 7 = Always or almost always).

Job satisfaction was measured using Brayfield and Rothe’s (1951) scale which consisted of five items measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Brayfield and Rothe (1951) reported an odd/even product moment reliability of .77. Sample items included, “I feel fairly well satisfied with my present job.” and “Each day of work seems like it will never end.”

Life satisfaction was measured using Diener, Emmons, Larsen, and Griffin’s (1985) scale which consisted of five items measured on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Diener et al. (1985) reported a coefficient alpha of .87 for this scale and a two-month test-retest correlation of .82. Sample items included, “In most ways my life is close to my ideal.” And “I am satisfied with my life.”

Procedure

An online survey was administered through the Axio survey system at Kansas State University. The survey was comprised of demographic items, job attitude scales, a personality measure, and a leadership measure (see Appendix A). The survey first informed participants of the research project and their rights, and then it asked participants if they agreed to participate in the survey. The second section of the survey included questions regarding the participants’ line of business, department, and direct supervisor. The third section of the survey included the actual survey questions with the attitude measures (12 scales total). The last section included the

demographic items. The demographic items were voluntary per the request of the organization. The management of the organization sent out notification and explanation of the survey prior to administration (see Appendix B). The survey was then administered on January, 8, 2008. Two e-mail reminders were sent to participants: the first reminder was sent four days after the original administration and the second reminder was sent four days later (January 12 & 16, 2008) (see Appendix C). Responses to the surveys were downloaded using the electronic survey system.

Analysis

The data were first examined using visual scans of data plots, means, standard deviations, skew, kurtosis, and scale minimums and maximums. As noted earlier, 69 people accessed the survey but did not complete it. Those 69 results were eliminated from the analyses. For the structural model analyses the data were imputed using SPSS's linear trend at point method. The linear trend at point data imputation method replaces missing values with the linear trend for that point using regression and missing values are replaced with predicted values (SPSS, Inc., 2006). All of the items on the survey were required, which meant everyone who completed the survey scales completed each item. However, the last section of the survey dealing with demographics was optional. For the correlation and regression analyses the pair-wise deletion was selected to account for the missing data in the demographics section. Most of the participants opted to complete this section. The question with the most people who chose not to complete it was the question about age (21 of the 382 did not complete it). The data conformed to the appropriate minimums and maximums for each scale. Skew and kurtosis were within normal limits for all Likert items. The means, standard deviations, and intercorrelations of all the relevant variables are reported in Table 1.

Structural equation modeling was used to perform confirmatory factor analyses for both the 1 and 3 factor structures of the Schaufeli engagement model and the one and three factor structures of the Shirom vigor model. Structural equation modeling was also used to examine the fit of various models. Hu and Bentler (1999) and Byrne (2001) have suggested using a variety of absolute and comparative fit indices when assessing the fit of models. This research employed the chi-square statistic (χ^2), the root mean square estimate of approximation (RMSEA), normed fit index (NFI), and the comparative fit index (CFI). Hu and Bentler (1999) have suggested values of less than 0.06 for the RMSEA and values exceeding 0.95 as acceptable for the NFI and CFI. However, others have suggested more liberal values of less than 0.10 for the RMSEA and values exceeding 0.90 for the NFI and CFI as acceptable (Byrne, 2001). The more liberal (lower) fit indices were used by me in this research. Byrne (2001) reported that non-significant chi-square statistics indicate a good fitting model. However, the chi-square statistic is sensitive to small sample sizes and non-normal data (Byrne, 2001). The chi-square statistic was used to compare the various models to each other and not as a method of accepting or rejecting models. When modification indices were used, the accepted modifications were those that yielded the greatest drop in the chi-square statistic and were also theoretically appropriate (Byrne, 2001).

Hierarchical regression analysis was used to determine the unique variance that the three engagement measures offer (above and beyond other job attitudes and personality variables) as well as how the personality facets predict the various engagement measures.

A relative weights analysis was used to determine the relative importance of some of the predictors in this study (LeBreton, Hargis, Griepentrog, Oswald, & Ployhart, 2007; Johnson & LeBreton, 2004). A relative weights analysis examines the proportionate contribution each

predictor makes to R^2 considering both its individual effect and its effect when combined with other variables in a regression equation (Johnson & LeBreton, 2004). A relative weights analysis supplements a traditional multiple linear regression analysis. Relative weights are calculated by creating a new set of uncorrelated predictors that are maximally related to the original set of correlated predictors and both sets of variables are used to estimate importance (Johnson, 2000). The estimates of relative importance sum to R^2 and the estimates reflect effect size. A relative weights analysis examines the comparative usefulness of new variables, which variable is driving the R^2 , how the new variable contributes to the R^2 which all adds information to an analysis of incremental validity.

CHAPTER 4 - Results

The means, standard deviations, and intercorrelations for all relevant demographic items and scale scores are presented in Table 1. The degrees of freedom for all correlations were 380. The manager variable (manager = 1; non-manager = 2) was negatively related to all of the job attitudes (i.e. the engagement measures, vigor, job involvement, perceived organizational support, and job and life satisfaction) with the exception of emotional energy (a sub-factor of Shirom's vigor) ($r = -.191$ to $-.302$, $p < .01$). Thus, managers had higher values on all of these variables. Men had higher cognitive liveliness than women ($r = -.184$, $p < .01$), but lower emotional energy ($r = .189$, $p < .01$) (both sub-factors of Shirom's vigor) and lower organizational commitment ($r = .246$, $p < .01$). Age was positively related to organizational commitment ($r = .162$, $p < .01$) and negatively related to intentions to leave ($r = -.134$, $p < .05$). Educational level was negatively related to organizational commitment ($r = -.318$, $p < .01$). There was a strong negative relationship between job satisfaction and intent to leave ($r = -.621$, p

< .01), stronger than previously reported in the literature (reported $r = -.23, p < .01$ from Keller, 1984). The reliabilities (coefficient alphas) for all the scales were in the acceptable range ($> .70$) (see Table 1).

Schaufeli's engagement had significant correlations with job satisfaction ($r = .701, p < .01$), extraversion ($r = .388, p < .01$), agreeableness ($r = .399, p < .01$), conscientiousness ($r = .331, p < .01$), neuroticism ($r = -.261, p < .01$), openness ($r = .270, p < .01$), reports of transformational leadership ($r = .270, p < .01$), positive affect ($r = .692, p < .01$), affective commitment ($r = .525, p < .01$), and turnover intentions ($r = -.475, p < .01$).

Shirom's vigor had significant correlations job satisfaction ($r = .491, p < .01$), extraversion ($r = .479, p < .01$), agreeableness ($r = .474, p < .01$), conscientiousness ($r = .373, p < .01$), neuroticism ($r = -.378, p < .01$), openness ($r = .351, p < .01$), reports of transformational leadership ($r = .193, p < .01$), positive affect ($r = .667, p < .01$), affective commitment ($r = .318, p < .01$), and turnover intentions ($r = -.291, p < .01$).

Britt's engagement had significant correlations with job satisfaction ($r = .464, p < .01$), extraversion ($r = .284, p < .01$), agreeableness ($r = .358, p < .01$), conscientiousness ($r = .328, p < .01$), neuroticism ($r = -.140, p < .01$), openness ($r = .145, p < .01$), reports of transformational leadership ($r = .248, p < .01$), positive affect ($r = .507, p < .01$), affective commitment ($r = .358, p < .01$), and turnover intentions ($r = -.330, p < .01$).

Turnover intentions had significant negative relationships with a number of variables including age ($r = -.134, p < .05$), tenure ($r = -.172, p < .01$), Schaufeli's engagement ($r = -.475, p < .01$), Shirom's vigor ($r = -.291, p < .01$), Britt's engagement ($r = -.330, p < .01$), reports of transformational leadership ($r = -.203, p < .01$), positive affect ($r = -.326, p < .01$), affective commitment ($r = -.541, p < .01$), and job satisfaction ($r = -.621, p < .01$).

Two basic models were hypothesized for the relationships between and among the variables in this research (see Figure 1 through Figure 6). Hypothesis one stated that a model with personality facets and leadership predicting engagement and engagement predicting job satisfaction and affective commitment and those constructs predicting intentions to leave will have a satisfactory fit (engagement as an antecedent to other job attitudes). Hypothesis two stated that personality and transformational leadership will have a direct effect on engagement, job satisfaction, and affective commitment and those constructs will have direct effects on intentions to leave (engagement as a correlate of other job attitudes). When job satisfaction and affective commitment were hypothesized to be outcomes of engagement, the model had a poor fit, thus hypothesis 1 was not supported ($\chi^2 = 66.99$, $df = 44$, $p < .01$; $NFI = .53$, $CFI = .54$, $RMSEA = .19$). Slight modifications were made by correlating some error terms (3 & 5; 6 & 8; 8 & 11). This improved the fit of the model, but it was still a poor fit ($\chi^2 = 386.14$, $df = 41$, $p < .01$; $NFI = .73$, $CFI = .75$, $RMSEA = .15$). When job satisfaction and affective commitment were hypothesized to be correlates of engagement this model also had a poor fit, thus hypothesis 2 was also not supported ($\chi^2 = 650.01$, $df = 24$, $p < .01$; $NFI = .44$, $CFI = .44$, $RMSEA = .26$). One modification was made based on the modification indices by correlating the error terms of residuals 7 & 9. This improved the fit of the model, but only slightly ($\chi^2 = 455.14$, $df = 23$, $p < .01$; $NFI = .61$, $CFI = .62$, $RMSEA = .22$). In a purely exploratory fashion, another model was tested based on the results of the two hypothesized and two modified models (see Figure 7). This model had a good fit with the data ($\chi^2 = 44.66$, $df = 10$, $p < .01$; $NFI = .95$, $CFI = .96$, $RMSEA = .095$) (see Figure 7).

Another set of models were tested using Shirom's vigor as the measure of engagement (see Figure 8 through Figure 12). None of these models had a good fit. The first hypothesized

model had vigor as an antecedent to other job attitudes ($\chi^2 = 750.72$, $df = 44$, $p < .01$; $NFI = .43$, $CFI = .44$, $RMSEA = .21$). This model was slightly modified according to the modification indices provided by the structural equation modeling program and it still does not have an acceptable fit ($\chi^2 = 386.46$, $df = 40$, $p < .01$; $NFI = .71$, $CFI = .73$, $RMSEA = .15$). The second hypothesized model had vigor as a correlate to other job attitudes ($\chi^2 = 500.24$, $df = 24$, $p < .01$; $NFI = .54$, $CFI = .54$, $RMSEA = .23$). Again the modification indices were used in an attempt to improve the fit of the model ($\chi^2 = 190.18$, $df = 20$, $p < .01$; $NFI = .82$, $CFI = .84$, $RMSEA = .15$). Finally, an attempt was made to create a model with vigor that would have an acceptable fit in an exploratory fashion ($\chi^2 = 99.43$, $df = 20$, $p < .01$; $NFI = .89$, $CFI = .91$, $RMSEA = .10$) (see Figure 12). This model had a marginally acceptable fit.

Confirmatory and modified confirmatory factor analyses were performed on some of the scales and models proposed in the hypotheses (see Figure 13 through Figure 20). The models tested the structure of the scales. The three factor structure of the Schaufeli et al. engagement model had moderate fit indices except for the *RMSEA* which was poor ($\chi^2 = 250.15$, $df = 24$, $p < .01$; $NFI = .90$, $CFI = .91$, $RMSEA = .16$). The one factor structure suggested by Schaufeli et al., was also not a good fit with the data ($\chi^2 = 341.61$, $df = 27$, $p < .01$; $NFI = .86$, $CFI = .87$, $RMSEA = .18$). In an exploratory fashion, slight modifications to both models were made as suggested by the modeling program. The three factor structure was modified so that some of the residual error terms were correlated (1 & 2; 2 & 3). These modifications produced a better fit than the hypothesized model, but it still did not meet the standards for a good fitting model ($\chi^2 = 161.30$, $df = 22$, $p < .01$; $NFI = .94$, $CFI = .94$, $RMSEA = .13$). The one factor model of engagement was also slightly modified in an exploratory fashion with some of the residual error terms being

correlated (1 & 2; 6 & 8; 8 & 9) and this produced an acceptable fit with a marginal *RMSEA* ($\chi^2 = 107.15, df = 24, p < .01; NFI = .96, CFI = .97, RMSEA = .10$).

Confirmatory and modified confirmatory factor analyses were also performed on the Vigor scale. The three factor vigor model had a poor fit ($\chi^2 = 450.78, df = 51, p < .01; NFI = .88, CFI = .89, RMSEA = .14$). A one factor model of vigor has also been suggested (Shraga, 2007). This model had an even poorer fit ($\chi^2 = 1291.86, df = 54, p < .01; NFI = .65, CFI = .66, RMSEA = .25$). Again, slight modifications to both hypothesized models were made based on modification indices provided by the modeling program. The one and three factor vigor models were modified by correlating the residual error terms (6 & 7; 7 & 8 for the three factor vigor model and 7 & 8; 9 & 10; 9 & 11; 9 & 12; 10 & 11; 10 & 12; 11 & 12 for the one factor vigor model). The modified three factor model had a good fit ($\chi^2 = 172.50, df = 49, p < .01; NFI = .95, CFI = .97, RMSEA = .08$). The modified one factor model also had a good fit ($\chi^2 = 147.31, df = 47, p < .01; NFI = .96, CFI = .97, RMSEA = .08$).

These series of factor analyses suggest that the following. The three factor structure of the Schaufeli engagement measure was not a good fit with the data even after modifications and the one factor structure was a better fit. Both the one and three factor structures of the Shirom vigor measure had acceptable fits – after slight modifications. None of the hypothesized models were good fits with the data, even after some modifications. Modified models for both the Schaufeli and Shirom measures were constructed in an attempt to find a good fit. These modified models had reasonable fits with the data, but should be regarded with caution as they have not been cross-validated with an independent sample.

A hierarchical regression was performed to test hypothesis three which stated that engagement will not offer additional unique variance to the prediction of turnover intentions

beyond that of job satisfaction and affective commitment (see Table 2). Job satisfaction was entered in the first step of the regression followed by affective commitment in the second step. The third step of the regression included the Schaufeli engagement scale (summed scale scores), the three sub-scales of Shirom's vigor scale, and Britt's engagement scale. Two of the vigor sub factors added unique variance to the prediction of turnover intentions in the third step ($R = .677$, $R^2 = .46$, $\Delta R^2 = .46$, $p < .01$; job satisfaction: $\beta = -.439$, $p < .01$; affective commitment: $\beta = -.264$, $p < .01$; engagement (Schaufeli): $\beta = -.075$, $p > .05$; physical strength (Shirom): $\beta = .227$, $p < .01$; emotional energy (Shirom): $\beta = .033$, $p > .05$; cognitive liveliness (Shirom): $\beta = -.175$, $p < .01$; engagement (Britt): $\beta = -.030$, $p > .05$). Hypothesis three was partially supported. Two of the three engagement measures did not add unique variance to the prediction of turnover intentions beyond that of job satisfaction and affective commitment. However, two of the vigor sub factors (physical strength and cognitive liveliness) did add unique variance to the prediction of turnover intentions. Those two sub components of the vigor scale are not redundant with job satisfaction or affective commitment in predicting turnover intentions.

A series of linear and hierarchical regressions were performed to assess hypothesis four, which stated personality factors would predict the various measures of engagement. For each of the three measures of engagement a regression was performed with the engagement measure as the dependent variable and the big five personality facets as the predictors (see Table 3 through Table 5). With the Schaufeli engagement measure as the dependent variable, four personality facets predicted engagement (except neuroticism) ($R = .524$, $R^2 = .274$, $\Delta R^2 = .274$, $p < .01$; extraversion: $\beta = .259$, $p < .01$; agreeableness: $\beta = .253$, $p < .01$; conscientiousness: $\beta = .143$, $p < .01$; openness: $\beta = .110$, $p < .05$). With Shirom's vigor measure as the dependent variable, again personality facets predicted vigor ($R = .636$, $R^2 = .405$, $\Delta R^2 = .405$, $p < .01$; extraversion: $\beta =$

.308, $p < .01$; agreeableness: $\beta = .274$, $p < .01$; conscientiousness: $\beta = .119$, $p < .05$; openness: $\beta = .155$, $p < .01$). With Britt's engagement measure as the dependent variable, personality facets predicted engagement ($R = .454$, $R^2 = .206$, $\Delta R^2 = .206$, $p < .01$; extraversion: $\beta = .201$, $p < .01$; agreeableness: $\beta = .270$, $p < .01$; conscientiousness: $\beta = .210$, $p < .01$; neuroticism: $\beta = .133$, $p < .05$).

Then hierarchical regressions were performed on the three engagement measures with positive affect in the first step of the regression and the big five personality facets in the second step (see Table 3 through Table 5). With Schaufeli's engagement measure as the dependent variable both positive affect and personality facets predicted engagement in the second step of the regression ($R = .705$, $R^2 = .498$, $\Delta R^2 = .019$, $p < .05$; positive affect: $\beta = .615$, $p < .01$; extraversion: $\beta = .075$, $p < .05$; agreeableness: $\beta = .137$, $p < .01$). With Shirom's vigor measure as the dependent variable, again both positive affect and personality facets predicted vigor in the second step of the regression ($R = .724$, $R^2 = .524$, $\Delta R^2 = .079$, $p < .01$; positive affect: $\beta = .449$, $p < .01$; extraversion: $\beta = .173$, $p < .01$; agreeableness: $\beta = .190$, $p < .01$; openness: $\beta = .087$, $p < .05$). With Britt's engagement measure as the dependent variable, positive affect and personality facets predicted engagement in the second step of the regression ($R = .556$, $R^2 = .309$, $\Delta R^2 = .052$, $p < .01$; positive affect: $\beta = .418$, $p < .01$; neuroticism: $\beta = .167$, $p < .01$; agreeableness: $\beta = .192$, $p < .01$; conscientiousness: $\beta = .115$, $p < .05$). For all three engagement measures, positive affect was the biggest predictor of engagement and various facets of the big five added unique variance depending on which engagement measure was the dependent variable – supporting hypothesis four.

In an extension of hypothesis 4, an examination of how the individual difference measures specifically predicted the sub-components of Schaufeli's engagement and Shirom's

vigor were made. For Schaufeli's engagement and Shirom's vigor; regressions were performed with each of the sub components as dependent variables and the big five personality facets and positive affect as independent variables (see Table 6 & Table 7). For all of these sub components, positive affect was the biggest predictor with the exception of vigor's emotional energy. The biggest predictor of emotional energy was agreeableness ($R = .564$, $R^2 = .318$, $\Delta R^2 = .318$, $p < .01$; agreeableness: $\beta = .413$, $p < .01$). The subcomponents of vigor all had positive affect as a significant predictor, but they all differed on the personality facets that were significant predictors. For physical strength extraversion and neuroticism were significant predictors (positive affect: $\beta = .440$, $p < .01$; extraversion: $\beta = .214$, $p < .01$; neuroticism: $\beta = -.093$, $p < .05$). For emotional energy agreeableness, extraversion, and neuroticism were significant predictors (agreeableness: $\beta = .413$, $p < .01$; positive affect: $\beta = .279$, $p < .01$; extraversion: $\beta = .102$, $p < .05$; neuroticism: $\beta = .106$, $p < .05$) and for cognitive liveliness openness were significant predictors (positive affect: $\beta = .407$, $p < .01$; openness: $\beta = .202$, $p < .01$; neuroticism: $\beta = -.122$, $p < .05$). These results suggest that the operationalization of the vigor measure distinguishes the three sub-components among various personality facets and that the vigor sub-components offer less overlap with regard to personality facets than the other measures of engagement.

A series of hierarchical regressions were performed to test hypothesis five, which stated engagement in its various forms, would not add unique variance to the prediction of turnover intentions beyond that of job satisfaction after controlling for demographics and personality. The results showed that Schaufeli's engagement measure did add unique variance to the model, but Shirom's vigor and Britt's engagement did not – partially supporting hypothesis five (see Table 8 through Table 10). In these regressions the first step included demographic variables (manager,

gender, age group, education level, and job tenure. The second step included the personality variables (big five personality facets and positive affect). The third step included job satisfaction and the last step included an engagement variable. For all the regressions tenure ($\beta = -.121, p < .01$), agreeableness ($\beta = -.177, p < .01$), and positive affect ($\beta = -.342, p < .01$) were significant predictors of turnover intentions in the second step of the regressions ($R = .425, R^2 = .181, \Delta R^2 = .134, p < .01$). However, none of those predictors were significant in the fourth and final step. Schaufeli's engagement added unique variance to the prediction of turnover intentions in step four of the regression (see Table 8) ($R = .667, R^2 = .445, \Delta R^2 = .007, p < .05$; job satisfaction: $\beta = -.576, p < .01$; Schaufeli's engagement: $\beta = -.142, p < .05$). The other two measures of engagement, Shirom's vigor and Britt's engagement, did not add unique variance to the prediction of turnover intentions (see Table 9 & Table 10). To examine the Schaufeli engagement variable in more detail, the same process of hierarchical regression was performed on each of the three sub-components of Schaufeli's engagement measure (see Table 11 through Table 13). In these analyses, only the dedication component added unique variance to the prediction of turnover intentions in the last step of the regression (see Table 13) ($R = .673, R^2 = .454, \Delta R^2 = .015, p < .01$; job satisfaction: $\beta = -.532, p < .01$; dedication: $\beta = -.210, p < .01$). Neither engagement's vigor nor engagement's absorption added unique variance to the prediction of turnover intentions (see Table 11 & Table 12). In summary, Schaufeli's engagement measure, specifically the dedication component, added unique variance to the prediction of turnover intentions beyond that of demographic variables, personality, and job satisfaction.

Given the results for hypothesis 5 somewhat contradicted what was found in the analysis of hypothesis three, a new series of regressions were run adding affective commitment in the

third step to see if the engagement variables still added unique variance to the prediction of turnover intentions (see Table 14 through Table 16). Neither Schaufeli's nor Britt's engagement added unique variance in the last step of the regression (see Table 14 & Table 16), but the physical strength and cognitive liveliness components of Shirom's vigor did add unique variance in the last step ($R = .712$, $R^2 = .506$, $\Delta R^2 = .024$, $p < .01$; agreeableness: $\beta = -.103$, $p < .05$; openness: $\beta = .096$, $p < .05$; job satisfaction: $\beta = -.494$, $p < .01$; affective commitment: $\beta = -.296$, $p < .01$; physical strength: $\beta = .161$, $p < .05$; cognitive liveliness: $\beta = -.248$, $p < .01$) (see Table 15). These results are consistent with those found in the tests for hypothesis 3.

Hierarchical regressions were performed to test hypothesis six with control variables in the first step (manager, gender, age group, education level, and job tenure), personality variables in the second step (big five personality facets and positive affect), and follower's reports of their leader's level of transformational leadership in the third step. Hypothesis six stated that after controlling for demographic variables and personality, followers' reports of their direct report's level of transformational leadership will significantly predict engagement. The various measures of engagement were the dependent variables in these regressions (see Table 17 through Table 19). The results partially supported hypothesis six. Follower's reports of their leader's levels of transformational leadership predicted both Schaufeli's engagement (see Table 17) ($R = .727$, $R^2 = .528$, $\Delta R^2 = .006$, $p < .05$; manager: $\beta = -.096$, $p < .05$; education level: $\beta = -.106$, $p < .05$; extraversion: $\beta = .090$, $p < .05$; agreeableness: $\beta = .099$, $p < .05$; positive affect: $\beta = .568$, $p < .01$; transformational leadership: $\beta = .087$, $p < .05$) and Britt's engagement in the third steps of the regressions (see Table 19) ($R = .578$, $R^2 = .334$, $\Delta R^2 = .012$, $p < .05$; manager: $\beta = -.117$, $p < .05$; agreeableness: $\beta = .156$, $p < .01$; conscientiousness: $\beta = .122$, $p < .05$; neuroticism: $\beta = .153$, $p <$

.01; positive affect: $\beta = .361, p < .01$; transformational leadership: $\beta = .119, p < .05$), but not Shirom's vigor (see Table 18).

A relative weights analysis was performed to test hypothesis seven, which stated that the Schaufeli measure of engagement would have a higher relative weight than the Britt engagement measure and the Shirom vigor measure. This hypothesis was supported. The Schaufeli measure of engagement had the highest relative weight (see Table 20) and accounted for 63.8% of the R^2 value. The various sub-components of the engagement measures were also examined and again, all three of the Schaufeli engagement sub-components had the top three highest relative weights (see Table 20).

A relative weights analysis was also performed to examine hypothesis eight which stated job satisfaction would have a higher relative weight than the Schaufeli engagement measure in the prediction of turnover intentions. The Schaufeli engagement measure was used because it had the highest relative weight compared to the other measures of engagement. These results showed that engagement had the third highest relative weight behind that of job satisfaction and affective commitment (see Table 21). Hypothesis eight was supported. Given the results from the regression test for hypothesis three, a relative weights analysis was performed with all three engagement measures and the other job attitudes. The sub-components of vigor were used in this analysis since two of those components added to the prediction of turnover intentions beyond that of job satisfaction and affective commitment. The relative weights analysis showed that job satisfaction, affective commitment, and Schaufeli's engagement measure still had the three highest relative weights (see Table 22).

Summary of findings for each hypothesis

1. It was hypothesized that a model with personality facets and leadership predicting engagement and engagement predicting job satisfaction and affective commitment and those constructs predicting intentions to leave would have a satisfactory fit (engagement as an antecedent to other job attitudes). This hypothesis was not supported.
2. It was hypothesized that personality and transformational leadership would have a direct effect on engagement, job satisfaction, and affective commitment and those constructs would have direct effects on intentions to leave (engagement as a correlate of other job attitudes). This hypothesis was not supported. Only an exploratory model had a good fit with the data.
3. It was hypothesized that engagement would not offer additional unique variance to the prediction of turnover intentions beyond that of job satisfaction and affective commitment. This hypothesis was partially supported. Two components of Shirom's vigor measure added unique variance to the prediction of turnover intentions beyond that of job satisfaction and affective commitment.
4. It was hypothesized that personality would significantly predict job engagement as measured by all three engagement scales. This hypothesis was supported. Positive affect and various facets of personality (extraversion, agreeableness, conscientiousness, openness, & neuroticism) predicted all three measures of engagement.
5. It was hypothesized that after controlling for demographics, personality, positive affect, and job satisfaction; engagement, in its various forms, would not add unique variance to the prediction of turnover intentions. This hypothesis was partially supported. When affective commitment was added to the predictors only the physical strength and

cognitive liveliness components of Shirom's vigor added unique variance to the prediction of turnover intentions.

6. It was hypothesized that after controlling for demographic variables and personality, followers' reports of their direct report's level of transformational leadership would significantly predict engagement. This hypothesis was partially supported. The reports of transformational leadership predicted both measures of engagement (Schaufeli and Britt), but not Shirom's vigor.
7. It was hypothesized that a relative weights analysis would show that the global (or one-factor) measure of engagement would have a higher relative weight than the Shirom vigor measure or the Britt engagement measure. This hypothesis was supported.
8. It was hypothesized that a relative weights analysis would show job satisfaction to have a stronger relationship with turnover intentions than engagement. This hypothesis was supported. Both job satisfaction and affective commitment had higher relative weights than engagement.

CHAPTER 5 - Discussion

This research began with four broad goals. The first broad goal was to critically examine engagement and other related psychological constructs such as job satisfaction, job involvement, perceived organizational support, organizational commitment, and life satisfaction. The second broad goal was to bring together engagement and transformational leadership and to examine how or whether an individual's level of engagement is related to their perceptions of their leader's transformational leadership, i.e. the perceived characteristics of his or her leader. The third goal of this research was to examine the role of personality in an individual's level of engagement. Here the goal was to begin to examine whether engagement was more trait-like or more state-like in nature. The previous research has shown that personality has been linked both theoretically and empirically to engagement and leadership (e.g. Judge, & Bono, 2000; Judge, Bono, Ilies, & Gerhardt, 2002; Wefald et al., 2007). The fourth and final broad goal of this research was to examine the relationships of engagement, leadership, and personality.

This research showed there were strong links between engagement/vigor, personality, and leadership. Followers' reports of leadership predicted engagement and individual difference variables also predicted engagement/vigor. The hypothesized models of how all three concepts fit together were not supported, but modified models and the regression results suggested there are many links between all three concepts.

The results also point to Shirom's concept of vigor as, perhaps, the most distinct from other constructs such as job satisfaction and affective commitment. Two of the components of vigor added unique variance beyond that of job satisfaction and affective commitment,

demonstrating that it is not fully redundant with those other constructs. Further, the confirmatory factor analyses suggested that the vigor concept has a better operationalization and possibly a better construction than the Schaufeli engagement concept. Only a modified one-factor model of Schaufeli's engagement had an acceptable fit with the data, whereas both a (modified) one and three factor model of Shirom's vigor had acceptable fits. The Britt measure is conceptually and operationally a one-factor model of engagement (Britt, 2003). As such factor analyses were not run on the Britt measure.

Before discussing the results from the eight hypotheses, a review is made of the general findings from this research related to the measures and constructs. The results of this research found some similarities and well as some differences with previous research. Those comparisons are outlined below.

The reliabilities of all the scales in this research were similar to those found in previous research. All the reported reliabilities (coefficient alphas) were above the acceptable limit ($> .70$) (see Table 1). Educational level was negatively related to organizational commitment ($r = -.318, p < .01$). This relationship was stronger than what the previously literature reported – negative correlations ranging from $-.15$ to $-.16$ (Allen & Meyer, 1990). There was a strong negative relationship between job satisfaction and intent to leave ($r = -.621, p < .01$), stronger than previously reported in the literature ($r = -.23, p < .01$ from Keller, 1984).

Zhu, Avolio, and Walumba (2007) reported a correlation of $.58$ between engagement (as operationalized by the Gallup Q12 engagement scale) and transformational leadership. This research found smaller relationships between leadership and Schaufeli's engagement ($r = .270, p < .01$), Britt's engagement ($r = .248, p < .01$), and Shirom's vigor ($r = .193, p < .01$).

Hallberg and Schaufeli (2006) reported relationships between engagement, job involvement, and organizational commitment ranging from .35 - .46. The results of this research support these findings. Britt's engagement was related to job involvement ($r = .44, p < .01$) and organizational commitment ($r = .26, p < .01$). Schaufeli's engagement was also related to job involvement ($r = .54, p < .01$) and organizational commitment ($r = .27, p < .01$). Shirom's vigor was related to job involvement ($r = .30, p < .01$), but not organizational commitment ($r = .07, n.s.$).

Judge, et al. (2002) reported relationships between leadership and the big five (neuroticism $r = -.24$; extraversion $r = .31$; openness $r = .24$; agreeableness $r = .08$; conscientiousness $r = .28$). This research found somewhat similar relationships between leadership and the big five (neuroticism $r = -.17, p < .01$; extraversion $r = .10, p < .05$; openness $r = .10, p < .05$; agreeableness $r = .26, p < .01$; conscientiousness $r = .09, n.s.$).

Allen and Meyer (1990) reported a relationship between job satisfaction and affective commitment ranging from .50 - .64 and a relationship between job involvement and affective commitment ranging from .30 to .50. The results of this research support the previous findings ($r = .58, p < .01$ & $r = .40, p < .01$, respectively). Allen and Meyer (1996) also reported a relationship between transformational leadership and affective commitment ranging from .39 - .45. This research found a slightly smaller correlation ($r = .31, p < .01$). The results of this research also support previous findings on the relationship between leadership and organizational commitment. Avolio et al. (2004) found a correlation of .15 and this research found a correlation of .13 ($p < .05$).

The general findings from this research related to the measures and constructs supports previous findings. The reliabilities of the measures were consistent with previous research. In

addition, the correlations between and among the measures were aligned with previous research. This supports the conclusions drawn in this research with regards to established constructs and measures.

The first two hypotheses directly examined goals two through four. These hypotheses focused on two alternatives models. Neither of the two hypothesized models were a good fit, however, one exploratory model did meet the minimum fit requirements. The first hypothesized model considered engagement an antecedent to other job attitudes (job satisfaction and affective commitment). The second model considered engagement a correlate of those job attitudes. The research to date has waffled between considering engagement an antecedent or correlate of other job attitudes (Christian & Slaughter, 2007; Harter, Schmidt, & Hayes, 2002; Macey & Schneider, 2008; Schaufeli & Salanova, 2007; Wefald & Downey, 2007). The research often attempts to merely distinguish engagement from other job attitudes using factor analyses (e.g. Hallberg & Schaufeli, 2006). The approach of this research was to use structural equation modeling to test some of the speculations made in the literature regarding engagement's place in the nomological network of psychological constructs measuring common job attitudes. Although neither hypothesized model had a good fit with the data, an exploratory model with engagement and job attitudes as correlates had a good fit with the data (see Figure 7). This model had antecedents of extraversion (predicting engagement and affective commitment), conscientiousness (predicting engagement), agreeableness (predicting job satisfaction, engagement, and affective commitment), and transformational leadership (predicting job satisfaction, engagement, and affective commitment). Job satisfaction, engagement, and affective commitment all predicted intentions to leave.

It should be noted that this analysis was purely exploratory and should be considered with caution. This model would need to be validated with another sample before any conclusions can be drawn from it. However, it does add weight to the idea that trait-like variables and perceptions of leadership by followers predict job attitudes and that those attitudes predict an important organizational outcome: intentions to leave the organization (c.f. Wefald, Loo, Downey, & Smith, 2007; Zhu, Avolio, & Walumbwa, 2007).

Given the results from the regressions and the fact that two sub-components of the vigor concept added unique variance to the prediction of intentions to leave the organization, the various models were reexamined using Shirom's vigor in place of Schaufeli's engagement. None of these models were a good fit with the data.

The rest of the hypotheses and analyses critically examine the engagement concept and address the first broad goal of this research. The third hypothesis stated that engagement would not add unique variance to the prediction of turnover intentions. This hypothesis was more speculative given the lack of research examining engagement in any kind of hierarchical regression. However, research done by Wefald and Downey (in press) reported that engagement did not add unique variance to the prediction of student performance. The results of this research showed that two of the vigor sub factors (physical strength and cognitive liveliness) added unique variance to the prediction of turnover intentions, however, neither Schaufeli's engagement nor Britt's engagement added unique variance. Given these results it can be said that the two sub components of the vigor scale (physical strength and cognitive liveliness) are not fully redundant with job satisfaction or affective commitment. This finding is important for both the academic and practitioner. These results suggest that the concept of engagement, as typically measured, may be flawed and that engagement may be redundant with job satisfaction

and affective commitment. Harter, Schmidt, and Hayes (2002) proposed that their measure of engagement, the Q12, is more actionable than other measures of job attitudes such as job satisfaction. However, they do not elaborate on how the Q12 is more actionable, presumably due to the proprietary nature of the measure. More research is needed to confirm these findings, but they highlight the idea that some measures of engagement may not add unique variance to the prediction of turnover intentions.

The fourth hypothesis was supported and it stated that personality variables would predict engagement. Previous research has found a relationship between engagement and personality suggesting at least some trait-like aspects to engagement (Wefald, Loo, Downey, & Smith, 2007). Wefald et al. (2007) found that conscientiousness and openness predicted Schaufeli's engagement; extraversion and neuroticism predicted physical strength; openness and neuroticism predicted cognitive liveliness; and agreeableness predicted emotional energy. The findings from Wefald et al. (2007) are similar to the results in this research – especially the results linking the sub-components of the Shirom vigor measure. Further, previous research has speculated about the relationship between engagement and personality (Macey & Schneider, 2008; Shirom, 2003). For both engagement measures and vigor, positive affect was the biggest predictor and various facets of the big five added unique variance depending on which measure was the dependent variable. For Schaufeli's engagement and Shirom's vigor; positive affect was the biggest predictor with the exception of vigor's emotional energy whose biggest predictor was agreeableness. To truly assess whether a concept is trait related it is important to conduct longitudinal studies and examine the test-retest reliabilities and the equality of both the means and variances (Wright, 2007). Lacking the ability to conduct those studies, the relationship

between trait-like variables and engagement provides some insight into the degree to which engagement might be trait related.

When only the Big Five personality facets were entered into a regression and when positive affect was added in a first step, the biggest relationship, in terms of largest R^2 value, was with the Shirom vigor measure. When the vigor sub-components were used as dependent variables in separate regressions with individual difference variables as predictors, more interesting results were found. Agreeableness had the largest beta weight for emotional energy and compared to Schaufeli's engagement sub-components, the vigor sub-components had stronger relationships with personality in terms of beta weights and they were unique for each sub-component.

These results provide an empirical finding for the theoretical speculations from both Shirom (2003) and Macey and Schneider (2008). Macey and Schneider (2008) speculated that trait-like positive affect would be very closely tied to trait-like engagement. Indeed, these results bear out that speculation. In most cases, general (trait) positive affect had the largest beta weight of all the individual difference variables in most of the tests of hypothesis 4. These results also suggest that Shirom's vigor measure may be more closely tied to traits than the other two measures. As such the vigor sub-components may be useful to organizations in selection procedures, i.e. it may be a useful measure to select employees who will have higher levels of vigor. These results suggest that there is a trait-like aspect to the various engagement measures. The results also suggest that none of the measures are adept at separating the trait aspects from the state aspects. There may also be a problem with each of the definitions of engagement and vigor. All three definitions describe the construct as a state. However, given the results from hypothesis 4, that may not be entirely true.

Similar to hypothesis three, but more narrow, hypothesis five looked only at whether engagement adds unique variance beyond that of job satisfaction and included more control variables (demographics and personality). Research examining this point is scarce. Only one study, conducted by the author and his major advisor, has looked at this issue (Wefald & Downey, in press). The results of the current research showed that Schaufeli's engagement measure did add unique variance to the model, but Shirom's vigor and Britt's engagement did not – partially supporting hypothesis five (see Table 8 through Table 10). These results run counter to the results from hypothesis three where only two components of Shirom's vigor added unique variance to the prediction of turnover intentions. When demographic information is controlled for and personality variables are entered before job satisfaction and engagement, Schaufeli's measure of engagement did add unique variance to the prediction of turnover intentions. However, this is because in those analyses affective commitment was not included as a predictor. When affective commitment was included, neither the Britt nor Schaufeli measure of engagement added unique variance to the prediction of turnover intentions. The physical strength and cognitive liveliness components of the Shirom vigor measure did add unique variance above and beyond both job satisfaction and affective commitment. These results suggest that Shirom's vigor measure, specifically those two components, are not fully redundant with established measures of job attitudes.

Hypothesis six examined followers' reports of their direct supervisor's level of transformational leadership and whether that would add unique variance to the prediction of engagement beyond that of demographic variables and personality. Previous research has found a link between transformational leadership and engagement; however, personality was not included as a control variable (Zhu, Avolio, & Walumbwa, 2007). The results partially

supported hypothesis six. Follower's reports of their leader's levels of transformational leadership predicted both Schaufeli's engagement (see Table 17) and Britt's engagement (see Table 19), but not Shirom's vigor (see Table 18). These results (along with the results from hypothesis four which showed that the vigor concept had the strongest relationship with personality) suggest that Shirom's vigor concept may be less influenced by antecedents such as leadership variables and, as previously suggested, may be more trait-related.

These results also suggest that leadership is an important organizational variable – that can have indirect influence on organizational outcomes such as organizational commitment and turnover intentions (via engagement). The measure of leadership also addresses how malleable the engagement measures can be. If the behaviors of a leader have an influence on the engagement or vigor levels of that leader's employees, then it would provide evidence supporting the definitions of those constructs (engagement & vigor) – that they are state-like and are subject to influence from outside sources. The results of this research suggest that the engagement measures, but not the vigor measure are subject to the influence of the leaders (as measured by followers). Given these results and the results from the tests for hypothesis 4, there is evidence that the engagement measures do not do a good job of teasing out the difference between state and trait aspects of the construct. It may be very difficult to construct a scale that completely delineates between state-like engagement and trait-like engagement, but it would make sense to modify the scales to refer to some measure of time, e.g. *Are you feeling vigorous right now?*, *Do you feel vigorous most days?*, or *Do you feel vigorous all the time?*, etc.

The importance of leadership for organizations also stems from the results indicating that it can affect the engagement of employees (using the Schaufeli or Britt engagement measures). This supports findings in the literature. Previous research has reported links between leadership

and important organizational outcomes such as follower job satisfaction, follower motivation, and group or organization performance (Judge & Piccolo, 2007). What is missing from this research is information about what leader behaviors contribute to or diminish employee engagement.

Hypotheses seven and eight were analyzed using relative weights analyses, which examined the proportionate contribution each predictor makes to R^2 considering both its individual effect and its effect when combined with other variables in a regression equation (Johnson & LeBreton, 2004). A relative weights analysis supplements a traditional multiple linear regression analysis.

This procedure was used to test hypothesis seven, which stated that the Schaufeli measure of engagement would have a higher relative weight than the Britt engagement measure and the Shirom vigor measure (total measures for all three scales) with turnover intentions as the dependent variable. Hypothesis seven was supported. The Schaufeli measure of engagement had the highest relative weight (see Table 20) and accounted for 63.8% of the R^2 value. The various sub-components of the engagement measures were also examined and again, all three of the Schaufeli engagement sub-components had the top three highest relative weights. These results are in line with findings for the Schaufeli measure in the academic literature. The Schaufeli measure is more widely used in the academic study of engagement (Christian & Slaughter, 2007).

A relative weights analysis was also performed to examine hypothesis eight which stated job satisfaction would have a higher relative weight than the engagement measures in the prediction of turnover intentions. The Schaufeli engagement measure was used because it had the highest relative weight compared to the other measures of engagement. These results

showed that engagement had the third highest relative weight behind that of job satisfaction and affective commitment (see Table 21) supporting hypothesis eight. Given the results from the regression test for hypothesis three, a relative weights analysis was performed with all three engagement measures and the other job attitudes. The sub-components of vigor were used in this analysis since two of those components added to the prediction of turnover intentions beyond that of job satisfaction and affective commitment. The relative weights analysis showed that job satisfaction, affective commitment, and Schaufeli's engagement measure were still the top three predictors of turnover intentions (see Table 22). These results add some credence to the idea that job satisfaction and commitment are better predictors of important organizational outcomes than engagement.

Recommendations

This research has generally shown the vigor measure to a better measure of what is termed engagement. Vigor contributed to the prediction of turnover intentions beyond that of personality, job satisfaction, and affective commitment. Further, the structure of the vigor construct, both the one and three factor structures, had a better fit than the one and three factor Schaufeli engagement structures. The vigor measure falls short of the Schaufeli engagement measure in the relative weights analyses. However, this may be because of the high overlap between the Schaufeli engagement measure and job satisfaction. When job satisfaction is included in the relative weights analysis, it had the highest relative weight. So the Schaufeli measure may be substituting for job satisfaction when it is not included and that leads to Schaufeli's engagement having the highest relative weight. Further, the relative weights analysis is not intended to replace findings from regression analyses. It is intended as a supplement

(Johnson & LeBreton, 2004). For those reasons, the vigor measure is recommended as the overall better measure of job engagement.

The vigor measure may have some utility for practitioners as a selection tool, given its relationship with individual difference variables. The primary problems with using the vigor measure as a selection tool would be social desirability and the potential for respondents manipulating the results. Participants may see through the vigor measure, which makes no attempt to hide what it is measuring and respond according to what they perceive is desired by the organization. Further, the vigor measure was not developed as a selection tool. Its theoretical basis is in the Conservation of Resources theory and it was developed as a way to measure how an employee is responding at work as opposed to how a job candidate says they will respond to a potential job (Christian & Slaughter, 2007; Shirom, 2003). The vigor measure could potentially be modified for this purpose and that is a potential future research area.

Currently, the vigor measure is not the most popular measure of work engagement. The Schaufeli measure of engagement is much more popular in peer reviewed academic journals (Christian & Slaughter, 2007). However, this research suggests that it is a better measure, less redundant, than either the Schaufeli or Britt engagement measures.

Both engagement and vigor overlap with job satisfaction to a large extent. However, only the vigor measure adds unique variance after controlling for demographics, personality, and affective commitment above and beyond that of job satisfaction. This research suggests that either the Schaufeli or Britt measure of engagement could be replaced with a measure of job satisfaction and achieve similar predictions.

The results of this research also lend empirical support to some of the speculations Macey and Schneider (2008) outlined in their theoretical article on engagement. This research found a

strong link between personality and engagement as speculated by Macey and Schneider. A link between leadership and engagement was also supported empirically with the research previously speculated by Macey and Schneider (2008) and Shirom (2003). This research was not able to tease out any definite distinctions between trait-like engagement and state-like engagement, which may be due to limitations of the measures themselves. It may also be because people may have both trait-like engagement levels and have some malleability of those engagement levels. That is, people may have a stable mean level of engagement, but may show variability around that mean level of engagement. This conceptualization would mirror findings from Fleeson (2001), who reported that personality is a set of density distribution of states and that a person's mean trait relevant state is stable and predictable.

Limitations

All of the data were self-reported which may have inflated the correlations, due to common method variance, between and among the constructs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). All of the data also came from one sample of employees, in two separate lines of business, at a mid-sized financial institution. When engagement was a predictor, there was only one dependent variable, turnover intentions. Actual turnover rates were provided by the organization, however, those results were at the line of business level rather than front-line group level. This rendered those data unusable. Results should be replicated using objective measures of performance, turnover, retention rates, and other behaviors desired by organizations such as citizenship behaviors. As mentioned earlier, the true test of a concept's stability is to examine it longitudinally. This was not possible in this study and future research should examine the stability of the various measures of engagement by using longitudinal designs and looking at the test-retest reliability of the engagement measures. Another limitation was the use of the Carless,

Wearing, and Mann (2000) GTL measure. Although this is a good, reliable, and overall measure of transformational leadership, it does not allow for specific analyses of the various components of transformation leadership or what specific behaviors predict various outcomes.

Future directions

The results of this research project answered some questions and raised others. It appears that vigor is a better measure of engagement than either the Schaufeli or Britt measures. The vigor measure added unique variance to the prediction of turnover intentions beyond that of job satisfaction and affective commitment when the others did not and its structure had acceptable fits with the data. Vigor also had more distinguishing and stronger relationships with personality facets. However, it was also a weaker predictor of turnover intentions than the Schaufeli measure. More research is needed on a broader range of outcomes – not just turnover intentions. When possible, employee performance ratings and objective measures of performance should be utilized.

The stability of all three measures was not addressed in this research. Future research should examine the stability of engagement and vigor with longitudinal studies and examine the test-retest correlation as well as the equality of means and variances (Wright, 2007). Further, research should examine vigor and engagement with other positive organizational attitudes such as subjective and positive well-being.

Another important goal for both academics and practitioners should be to begin teasing out what leadership behaviors contribute to vigor and engagement and how. Future research could examine how or whether certain leader behaviors impact the relationship between individual difference variables and vigor or engagement. As suggested earlier, future research could also begin the development of a personnel selection scale based on existing measures of

vigor and engagement that are specifically suited for selection procedures. This would address the relationship between trait constructs and vigor and engagement. Further, it would add another practical use to vigor and engagement for organizations.

The examinations of the hypothesized models in the analyses were not supported in this research. However, some of the modified models did have good fits with the data. These modified models could provide direction for future research and should be cross-validated with independent samples.

Another step future research could take would be to utilize the full Multifactor Leadership Questionnaire (MLQ) (Bass, 1985). This measure was not utilized in this research due to cost and space restrictions. Further, the MLQ requires a survey to be confidential versus anonymous in order to connect followers with their respective leaders. A confidential survey would also be another step future research could take. This would allow for more specific linking of leaders and followers. Further, using different samples of employees from different organizations and different types of jobs would be another useful step future research could take.

Summary

The hypotheses, analyses, and results were constructed to address the four broad goals of this research project. The first broad goal was to critically examine engagement and other related psychological constructs. In a few cases, engagement did add unique variance above and beyond that of job satisfaction and affective commitment; however, it was clearly the third best predictor behind those two concepts. This is very important because much of the academic research has assumed that engagement is a unique construct and many organizations are using engagement as if it were a unique construct. If established constructs already exist that overlap with engagement so much that engagement does not add anything useful, then why not simply

use the existing constructs? The second broad goal was to bring together engagement and transformational leadership and to examine how or whether an individual's level of engagement is related to their perceptions of their leader's transformational leadership, i.e. the perceived characteristics of his or her leader. In some cases, the leadership variable did add unique variance to the prediction of engagement (Schaufeli & Britt). The third goal of this research was to examine the role of personality in an individual's level of engagement. The results suggested that there is a substantial relationship between personality and all three measures of engagement. The final goal of this research was to examine the relationships of engagement, leadership, and personality. Various models were tested to examine this goal of the research; however, none of the hypothesized models supported the hypotheses (that the three constructs were related in hypothesized and specific ways).

Engagement may not add anything unique to the prediction of important outcomes such as intentions to leave the organization because of both theoretical and methodological issues. Theoretically, all of the engagement definitions are similar to both job satisfaction, organizational commitment (particularly affective commitment), and job involvement. Newman and Harrison (2008) proposed that the items of the Schaufeli engagement measure are merely a repackaging of items from well known instruments such as job involvement, job satisfaction, organizational commitment, and positive affect. Their research reported similarities between the Schaufeli engagement items and items from well known instruments such as organizational commitment, job satisfaction, positive affect, and job involvement. Shirom's vigor concept seems to more clearly delineate between its components. The physical strength and cognitive liveliness components appear to measure something different than job satisfaction or affective commitment. Job satisfaction and affective commitment seem to overlap considerably with

emotional energy (from Shirom's vigor) and both the Schaufeli and Britt versions of engagement.

The engagement concept, in all its variations, is a very popular topic- more so in industry than academics. However, it is one of the duties of academics to validate and report research findings to industry so they can improve their organizations. This research was a critical examination of a popular concept. The results support what many academics have previously speculated about – that engagement is not really a new concept, rather a repackaging of other, established constructs (Newman & Harrison, 2008). This research was the first empirical study to combine all three academic measures of engagement and compare them simultaneously. The findings of this study suggest that the Schaufeli and Britt measures of engagement overlap substantially with job satisfaction and affective commitment. Only the vigor measure added unique variance beyond that of job satisfaction and affective commitment. However, Schaufeli's engagement measure had the highest relative weight when predicting turnover intentions. When job satisfaction and affective commitment were included in the relative weights analysis, they were the best predictors of turnover intentions. When those concepts are left out of the analysis and Schaufeli's engagement and Shirom's vigor are compared, the engagement measure may be picking up the variance that satisfaction and commitment would otherwise pick up, thus leading to engagement beating out vigor. Speculatively, there may be other outcomes such as objective performance measures and employee performance evaluations that would have different results. Additionally, the relative weights analyses are to be regarded as supplements to the regressions analyses and not replacements. The factor analyses of the various measures suggest the vigor measure is a better scale and the regression results suggest vigor has more distinct relationships with personality facets.

In addition to a critical examination of engagement, one of the broad goals of this research was to link engagement, personality, and leadership. These relationships were the focus of the structural models in the analyses. Although the hypothesized models were not supported, some interesting modified models were created that did have good fits with the data. As suggested in the future directions sections, these models should be cross-validated with independent samples. These modified models do lend some support to the idea that individual difference variables (personality), leadership, and engagement are linked. The precise nature of those linkages has yet to be fully determined.

This research showed that the concept of engagement should be viewed with a healthy dose of skepticism. Engagement was highly related to trait-like variables and had substantial overlap with more well established job attitudes, specifically job satisfaction and affective commitment. When job satisfaction and affective commitment preceded engagement in a regression analysis, only two components from one of the three engagement measures predicted turnover intentions above and beyond the other job attitudes. More research is needed, but these results indicate that the distinctiveness of engagement from other, established constructs is dubious (c.f. Griffin, Parker, & Neal, 2008; Newman & Harrison, 2008).

It often seems that every so often a “new” concept comes along that offers organizations prosperity with little cost. Engagement is a popular and positive concept that is appealing to both practitioners and academics. This may be due to a perception that engagement is more *actionable* than other job attitudes such as job satisfaction. This research was an attempt to critically and empirically examine the engagement concept and the various ways it is measured. Engagement, as a construct, is not a silver bullet for organizations. However, engagement or

vigor may be a useful concept for organizations as both a selection instrument and as a way to assess the relative states of fulfillment of employees, groups, and organizations.

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Appendix A - Organizational survey

Organizational Survey for XXX Corporation in association with Kansas State University.

Survey Description:

Following is a survey for XXX Corporation and its associates. This survey is a joint project between Kansas State University and XXX. Participation in the survey is voluntary and your identity and responses, should you choose to participate, will be kept anonymous and confidential. The survey will take approximately 30 minutes to complete. If you have any questions regarding the survey, please contact either:

Ron Downey

785-532-5475

downey@ksu.edu

Questions regarding this project's approval with the Institutional Review Board may be directed to Rick Scheidt, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506.

Thank you very much for your participation.

Opening Instructions:

TERMS OF PARTICIPATION: I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits to which I may otherwise be entitled.

I verify that my participation in this survey indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

Please answer all the questions as honestly and openly as possible.

Informed consent

I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits to which I may otherwise be entitled.

I verify that my participation in this survey indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

**** required ****

Please indicate your agreement to participate in this survey.

1 – I agree to participate

2 – I choose not to participate

Perceived Organizational Support

Listed below are statements that represent possible opinions that YOU may have about working at XXX, Inc. Please indicate the degree of your agreement or disagreement with each statement by circling the answer that best represents your point of view about XXX, Inc. Please choose from the following answers:

1 = strongly disagree and 5 = strongly agree

The organization values my contribution to its well-being.

The organization fails to appreciate any extra effort from me.

The organization would ignore any complaint from me.

The organization really cares about my well-being.

Even if I did the best job possible, the organization would fail to notice.

The organization cares about my general satisfaction at work.

The organization shows very little concern for me.

The organization takes pride in my accomplishments at work.

Job Involvement

Below are a number of statements each of which you may agree or disagree with depending on your own personal evaluation of your work. Please indicate the degree of your agreement or disagreement with each statement using the scale below and circling the number that represents your response.

1 = strongly disagree and 5 = strongly agree

The most important things that happen in life involve my work

To me, my work is only a small part of who I am

I am very much involved personally in my work

I live, eat, and breathe my work

Most of my interests are centered around my work

I like to be absorbed in my work most of the time

Usually I feel detached from my work

Most of my personal life goals are wrapped up in my work

I consider my work to be very central to my existence

I have very strong ties with my current work which would be difficult to break

Vigor – Shirom

The following statements describe how you feel at work. Listed below are several feelings you may have at work. Please indicate the degree of your agreement or disagreement with each reason by circling the number that best represents your point of view. Please choose from the following:

1 = Never or almost never to 7 = Always or almost always

How Often Have You Felt This Way Work?

I feel full of pep

I feel I have physical strength

Feeling vigorous

I feel energetic

Feeling of vitality

I feel I can think rapidly

I feel I am able to contribute new ideas

I feel able to be creative

I feel able to show warmth to others

I feel I am able to be sensitive to the needs of classmates and teachers

I feel I am capable of investing emotionally in coworkers and customers

I feel capable of being sympathetic to co-workers and customers

Job engagement – Schaufeli

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write “0” (zero) in the space preceding the statement. If you have had this feeling, indicate how often you feel it by writing the number (from 1 to 7) that best describes how frequently you feel that way.

1 Never

2 Almost never, a few times a year or less

3 Rarely, once a month or less

4 Sometimes, a few times a month

5 Often, once a week

6 Very Often, a few times a week

7 Always, every day

At my work, I feel that I am bursting with energy

At my job, I feel strong and vigorous

I am enthusiastic about my job

My job inspires me

When I get up in the morning, I feel like going to work

I feel happy when I am working intensely

I am proud on the work that I do

I am immersed in my work

I get carried away when I'm working

Job satisfaction

The following statements describe how much you enjoy your job. Listed below are several feelings you may have about your job. Please indicate the degree of your agreement or disagreement with each reason by circling the number that best represents your point of view.

Please choose from the following:

1 = strongly disagree and 5 = strongly agree

I feel fairly well satisfied with my present job.

Most days I am enthusiastic about my work.

Each day of work seems like it will never end.

I find real enjoyment in my work.

I consider my job rather unpleasant.

Life satisfaction

Below are five statements each with which you may agree or disagree depending on your own personal evaluation of your life in general. Please indicate the strength of your agreement/disagreement with each statement by circling the number that corresponds to your response. Please be open and honest in your responding.

1 = strongly disagree and 5 = strongly agree

In most ways my life is close to my ideal

The conditions of my life are excellent

I am satisfied with my life

So far I have gotten the important things I want in life

If I could live my life over, I would change almost nothing

Job engagement – Britt

Below are four statements each with which you may agree or disagree depending on your own personal evaluation of your level of engagement in your work. Please indicate the strength of your agreement/disagreement with each statement by circling the number that corresponds to your response. Please be open and honest in your responding.

1 = strongly disagree and 5 = strongly agree

1. I feel responsible for my job performance
2. I am committed to my job.
3. How well I do in my job matters a great deal to me.
4. How I do in my job influences how I feel.

Big Five Factors of Personality

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1 = strongly disagree and 5 = strongly agree

I see Myself as Someone Who...

- | | |
|--|--|
| ___ 1. Is talkative | ___ 23. Tends to be lazy |
| ___ 2. Tends to find fault with others | ___ 24. Is emotionally stable, not easily upset |
| ___ 3. Does a thorough job | ___ 25. Is inventive |
| ___ 4. Is depressed, blue | ___ 26. Has an assertive personality |
| ___ 5. Is original, comes up with new ideas | ___ 27. Can be cold and aloof |
| ___ 6. Is reserved | ___ 28. Perseveres until the task is finished |
| ___ 7. Is helpful and unselfish with others | ___ 29. Can be moody |
| ___ 8. Can be somewhat careless | ___ 30. Values artistic, aesthetic experiences |
| ___ 9. Is relaxed, handles stress well | ___ 31. Is sometimes shy, inhibited |
| ___ 10. Is curious about many different things | ___ 32. Is considerate and kind to almost everyone |

- | | |
|---|---|
| ___11. Is full of energy | ___33. Does things efficiently |
| ___12. Starts quarrels with others | ___34. Remains calm in tense situations |
| ___13. Is a reliable worker | ___35. Prefers work that is routine |
| ___14. Can be tense | ___36. Is outgoing, sociable |
| ___15. Is ingenious, a deep thinker | ___37. Is sometimes rude to others |
| ___16. Generates a lot of enthusiasm
with them | ___38. Makes plans and follows through |
| ___17. Has a forgiving nature | ___39. Gets nervous easily |
| ___18. Tends to be disorganized | ___40. Likes to reflect, play with ideas |
| ___19. Worries a lot | ___41. Has few artistic interests |
| ___20. Has an active imagination | ___42. Likes to cooperate with others |
| ___21. Tends to be quiet | ___43. Is easily distracted |
| ___22. Is generally trusting
literature | ___44. Is sophisticated in art, music, or |

Organizational commitment

The following statements concern how you feel about the department where you work. Please indicate the extent of your agreement or disagreement with each statement by circling a number from 1 to 5.

1 = strongly disagree and 5 = strongly agree

Right now, staying with the organization is a matter of necessity as much as desire.

One of the few serious consequences of leaving the organization would be the scarcity of available alternatives.

Things were better in the days when people stayed with one organization for most of their careers.

I think that people these days move from organization to organization too much.

I feel a strong sense of belonging to the organization.

It would be very hard for me to leave the organization right now, even if I wanted to.

One of the major reasons I continue to work for the organization is that I believe that loyalty is important and therefore I feel a sense of moral obligation to remain.

I do not feel 'emotionally attached' to the organization.

I do not feel like 'part of the family' at the organization.

I feel that I have too few options to consider leaving the organization.

The organization has a great deal of Personal meaning for me.

Jumping from organization to organization does not seem at all unethical to me.

Transformational Leadership

The following statements concern how you feel about your supervisor where you work. Please indicate the extent of your agreement or disagreement with each statement by circling a number from 1 to 5.

1 = strongly disagree and 5 = strongly agree

My supervisor communicates a clear and positive vision of the future.

My supervisor treats staff as individuals, supports and encourages their development.

My supervisor gives encouragement and recognition to staff.

My supervisor fosters trust, involvement and cooperation among team members.

My supervisor encourages thinking about problems in new ways and questions assumptions.

My supervisor is clear about his/her values and practices what he/she preaches.

My supervisor instills pride and respect in others and inspires me by being highly competent.

Intentions to leave

Please think about your future at XXX. Please indicate, by circling the appropriate number, your level of agreement with the following statements.

1 = strongly disagree and 5 = strongly agree

I am currently looking for a job outside the field of XXX.

I expect to leave for another company within the next year.

I expect to change my job in the next few months.

I intend to leave the XXX profession as soon as possible.

I have begun the process of changing from XXX to another profession.

I probably will be in this job for some time to come.

Positive/Negative Affect

Directions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way in general.

Use the following scale to record your answers.

(1) = Very slightly or not at all

(2) = A little

(3) = Moderately

(4) = Quite a bit

(5) = Extremely

Interested

Distressed

Excited

Upset

Strong

Guilty

Scared

Hostile

Enthusiastic

Proud

Irritable

Alert

Ashamed

Inspired

Nervous

Determined

Attentive

Jittery

Active

Afraid

Demographic information

Responses to this section or any item in this section are **OPTIONAL**. However, your responses to these questions will help us more fully understand the groups' responses to the other questions. These questions have been designed to minimize any potential intrusion or identification of any kind. Please be assured that your responses are and will remain confidential and will only be available to the research team at Kansas State University.

Are you a manager at XXX?

Yes

No

What is your gender?

Male

Female

What age group are you in?

Under 25 years

25-35 years

36-45 years

46-55 years

over 55 years

Please indicate your highest level of education attained:

Less than high school

High school/GED

Some college

4-year college degree (BA/BS)

Master's degree

Professional or doctoral degree (MD, JD, PhD)

How long have you worked for XXX?

< 1 year

1-3 years

4-10 years

11-19 years

20+ years

Closing Statement

Thank you for participating in this survey! This survey was administered to learn more about engagement and how it relates to leadership, personality, and other job attitudes. Summary reports will be provided to the organization and its managers. If you have any questions about this survey, please contact either:

Ron Downey

785-532-5475

downey@ksu.edu

Appendix B - Organizational announcement of survey

Send 1/3/08 - Announcement from Manager A and Manager B to their staff
Subject: Partnership with Kansas State University

Recently Organization X was selected and approached by Kansas State University with an opportunity to partner in a research study on associate engagement. As a good corporate citizen and recognizing the mutual benefits of this initiative, we have accepted this opportunity and are pleased to participate.

Our participation involves associates in our division completing a brief survey administered by K-State. On approximately 1/8, you will receive a link to a brief survey directly from K-State which takes approximately 30 minutes to complete. All responses are confidential and collected electronically by the University. You will have two weeks to complete the survey and we strongly encourage you to participate.

You may be wondering if this duplicates or negates our previous internal survey. To the contrary, results of the K-State survey will provide valuable information as a next step or "drill down" to fill in gaps of information and help our organization with targeted follow up initiatives planned as a result of your Organization X Associate Survey action teams or focus groups. Your participation in this survey and your continued follow-up actions to address areas that require improvement are extremely important to us.

The survey will also ask for additional demographics about each respondent such as age, gender, tenure, manager and education level attained. Providing this data is optional, however, doing so will allow K-State to conduct more in-depth research and compare our results to other survey participants. Please keep in mind all individual responses are strictly confidential, Organization X will not have any access to the individual responses that you submit.

We are pleased to be considered a valuable contributor in this research and appreciate your cooperation and participation in this important survey. Please contact your Manager or OE Business Partner if you have any questions. Thank you very much!

Manager A/Manager B

Appendix C - Organizational survey reminder message

Subject: K-State Partnership

Last week you received a message requesting your participation in an associate engagement survey being conducted by Kansas State University. Thank you for taking time to participate. If you have not had an opportunity to complete the survey, please take a few minutes to do so.

We appreciate your attention and participation.

Thanks, Manager A/Manager B

Figure 1 Hypothesized model of personality, job attitudes, and turnover intentions

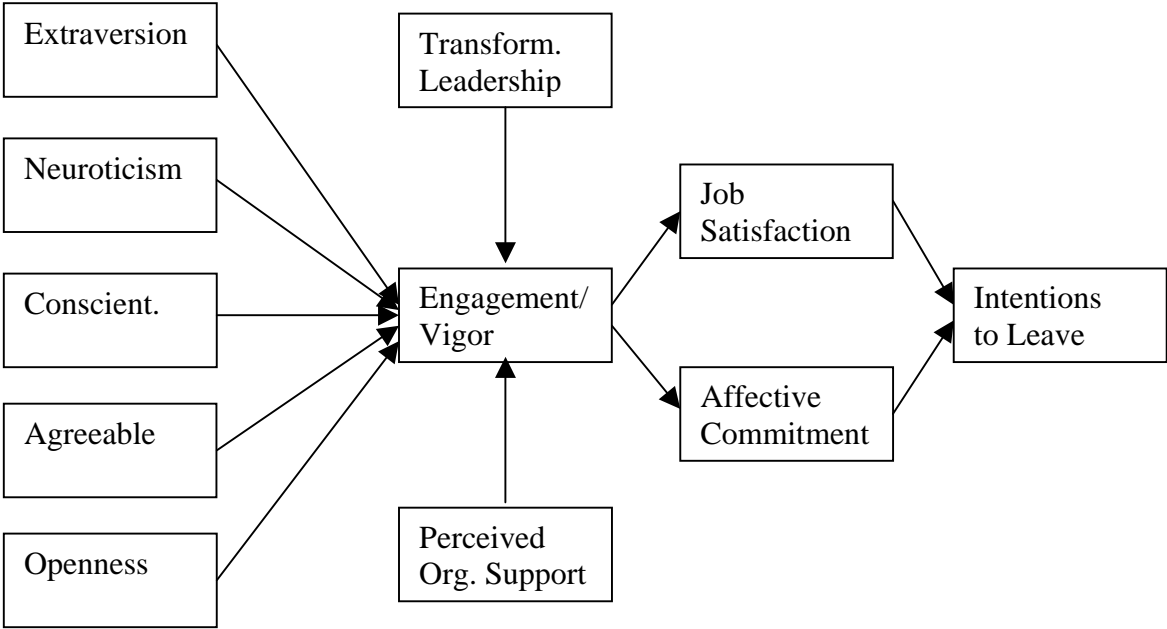


Figure 2 Alternate model of personality, job attitudes (as correlates), and turnover intentions

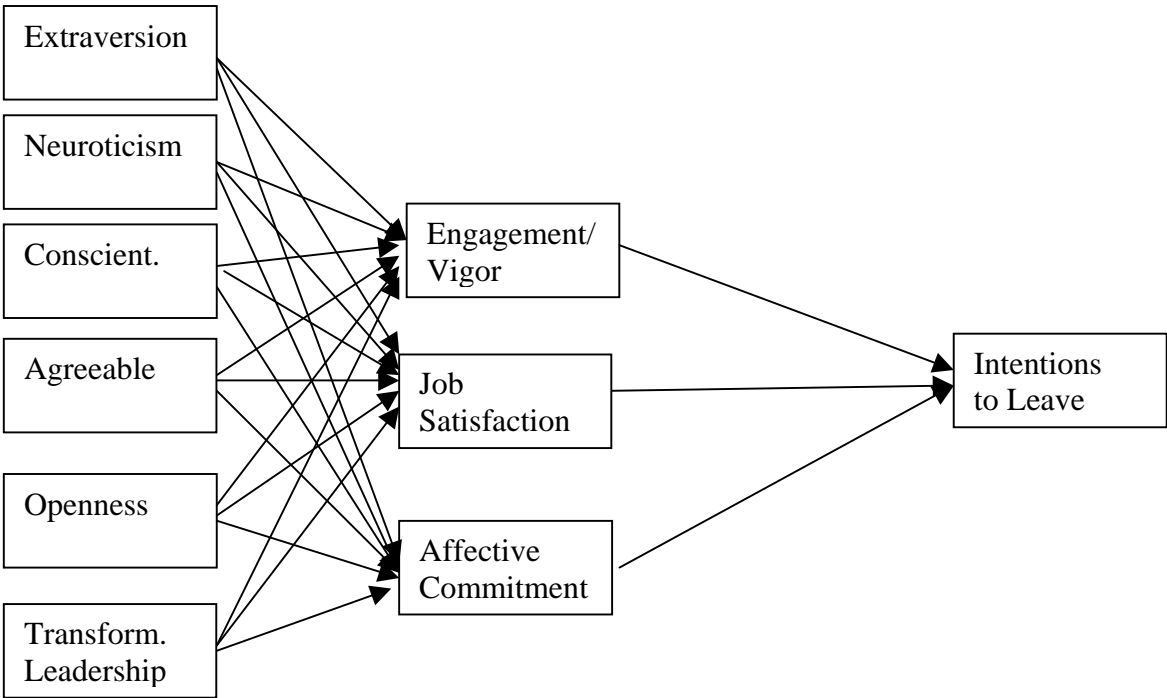
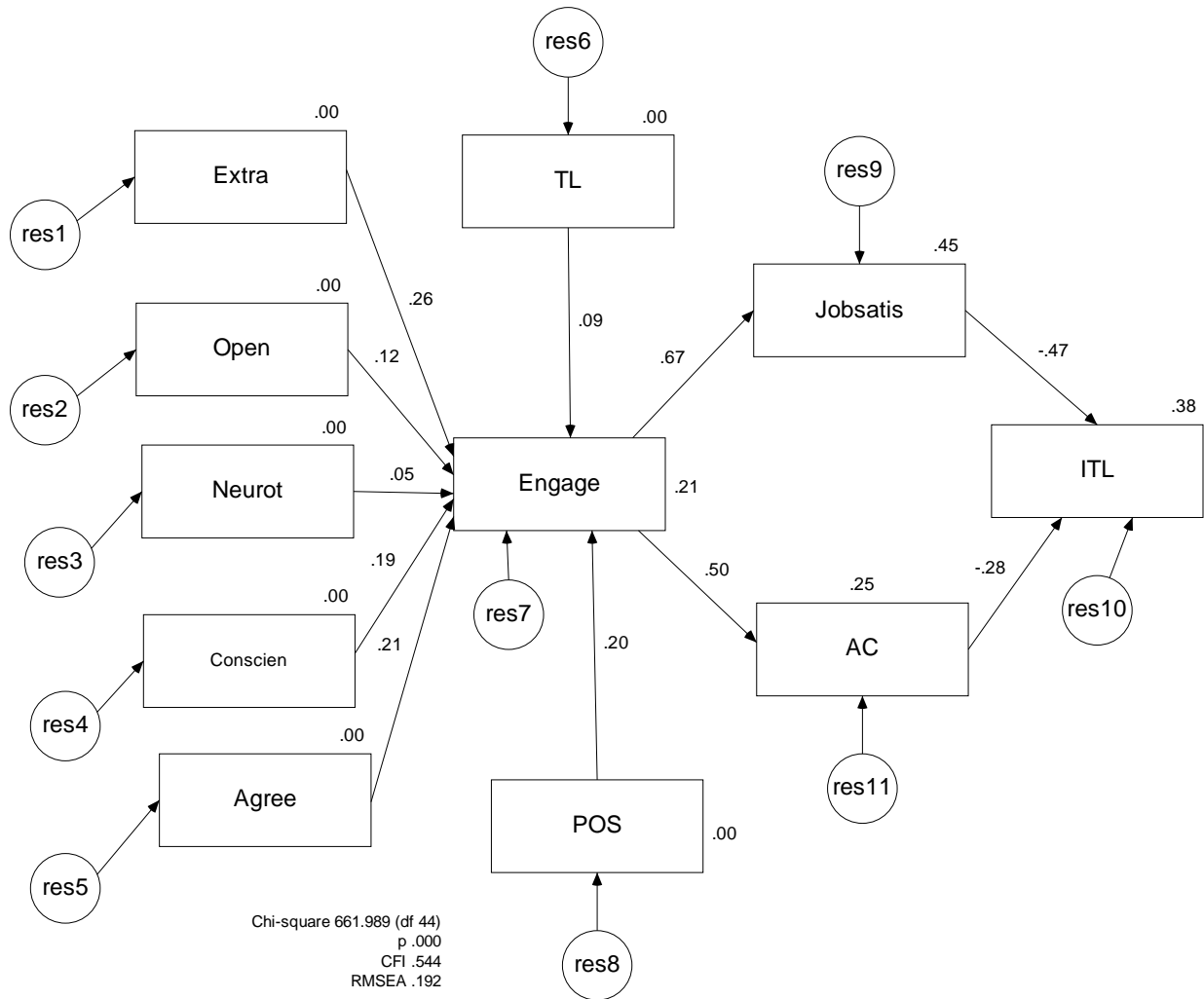
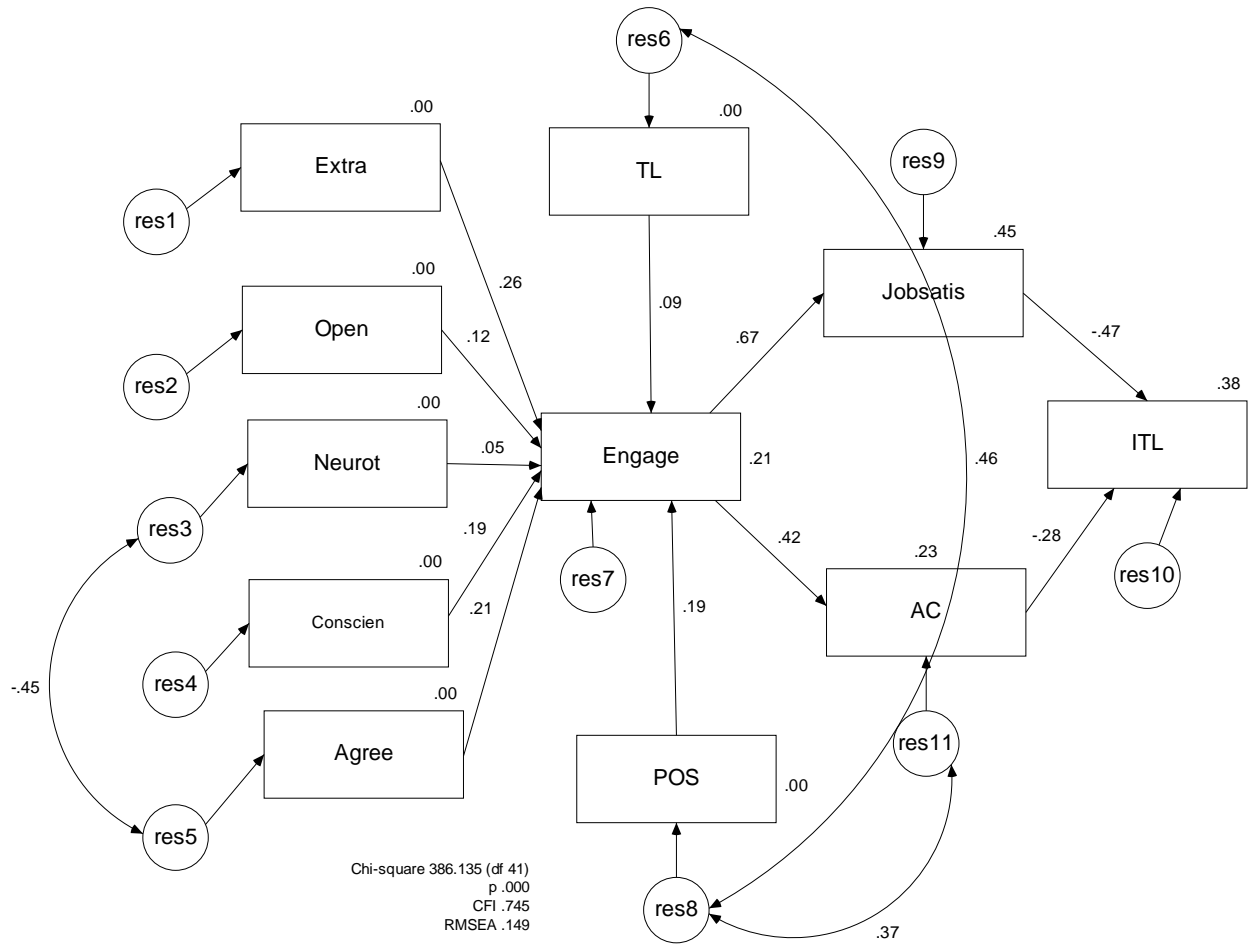


Figure 3 Hypothesized model of research variables



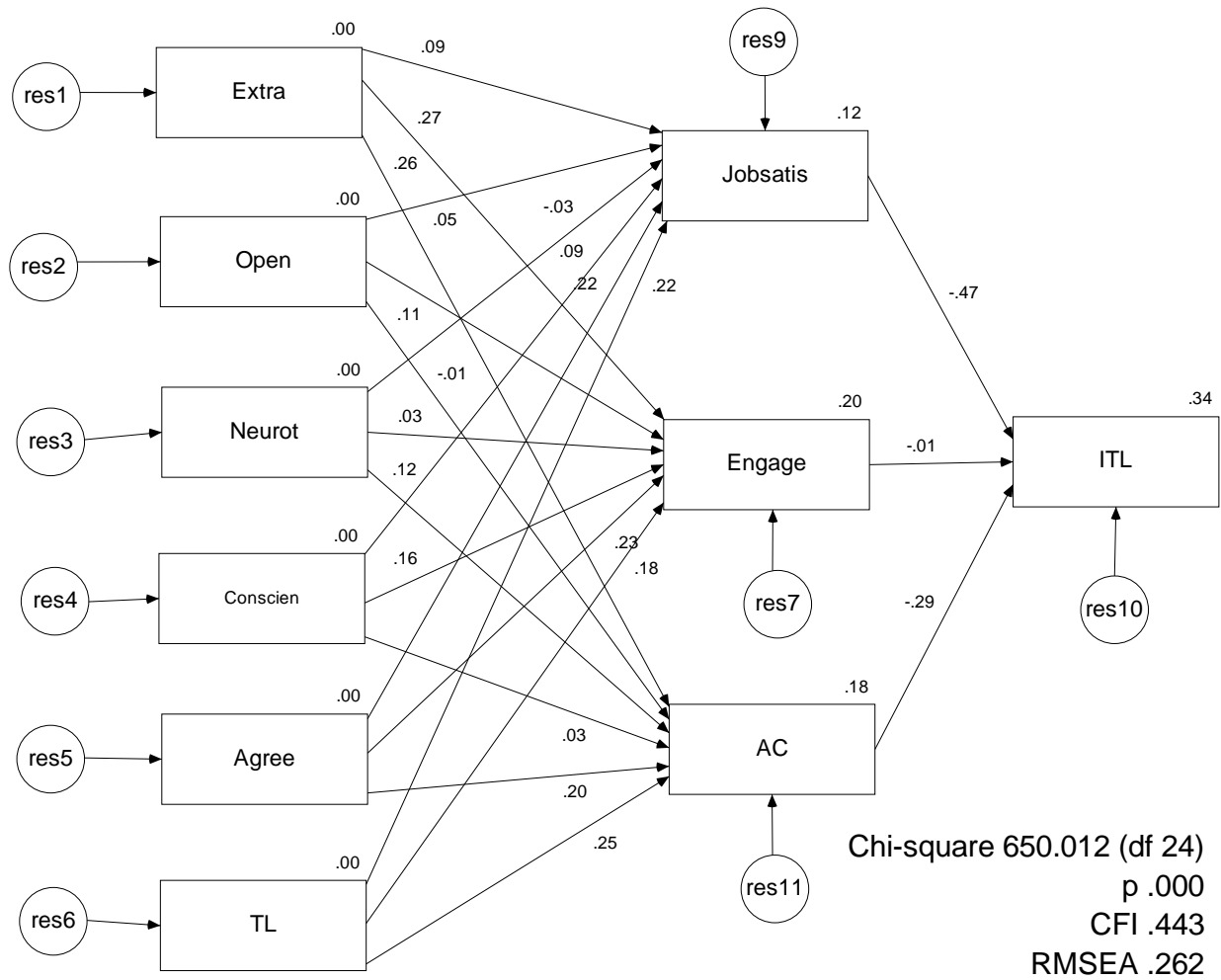
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Engage = engagement (Schaufeli), POS = perceived organizational support, Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 4 Hypothesized model of research variables with modifications



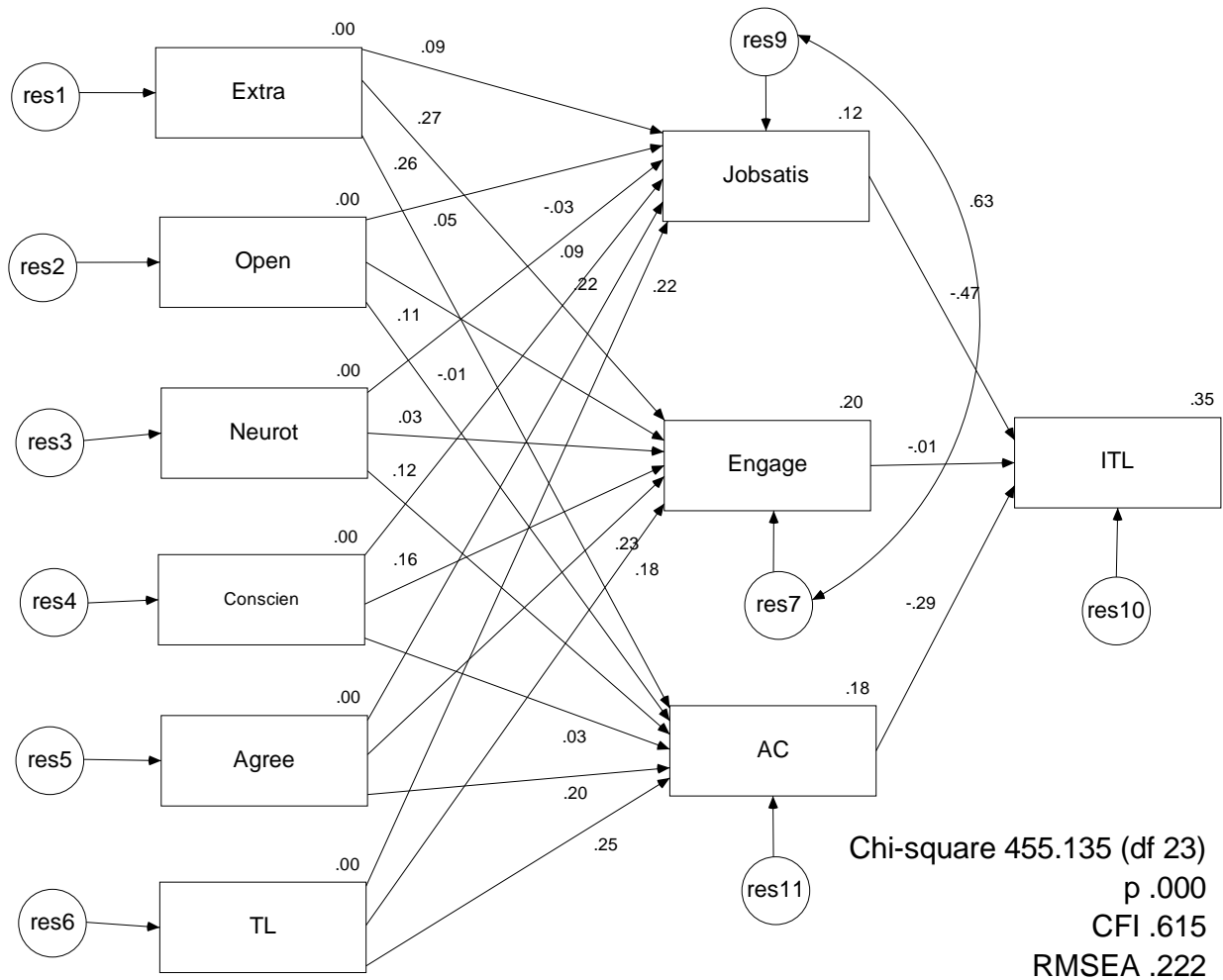
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Engage = engagement (Schaufeli), POS = perceived organizational support, Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 5 Second hypothesized model of research variables



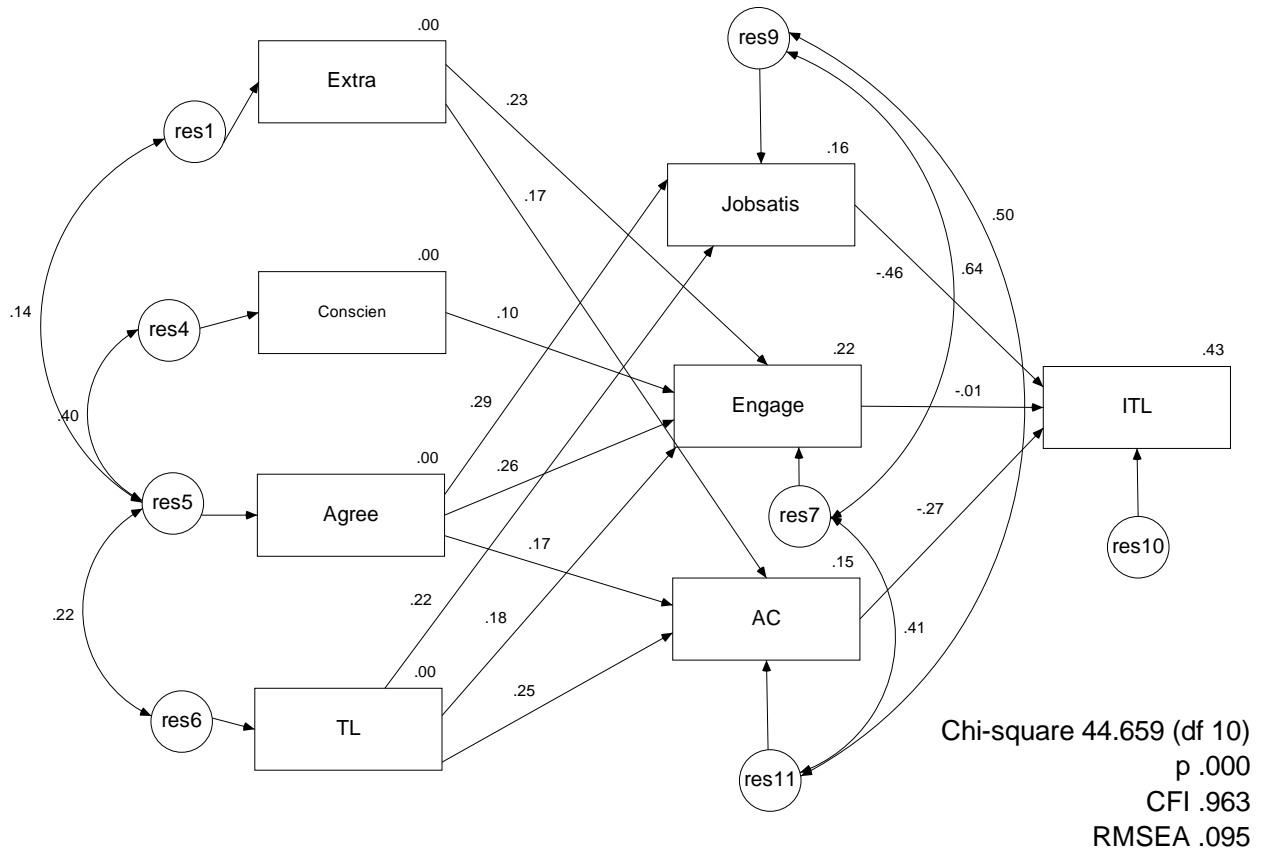
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Engage = engagement (Schaufeli), Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 6 Second hypothesized model of research variables with modifications



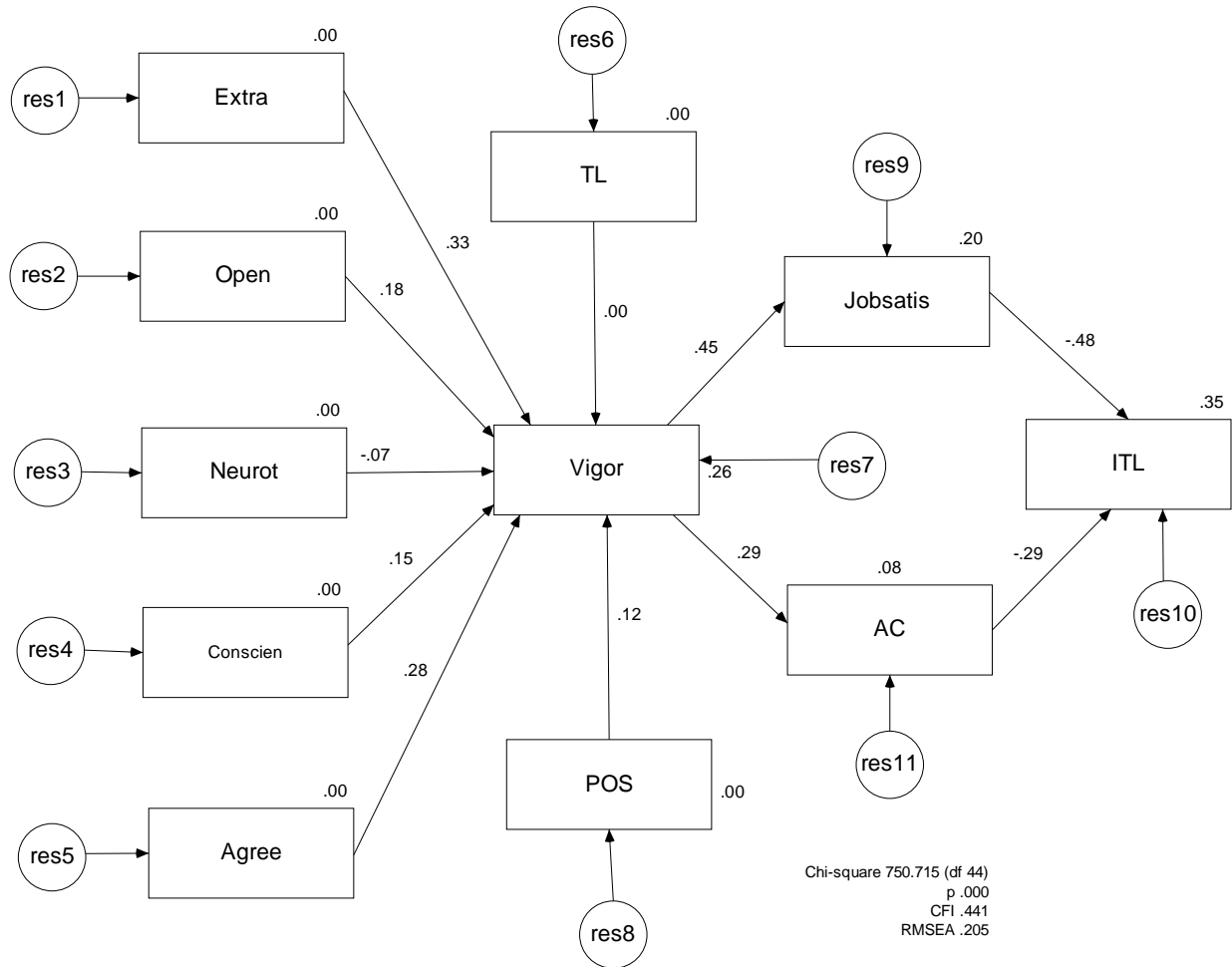
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Engage = engagement (Schaufeli), Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 7 Exploratory model of research variables



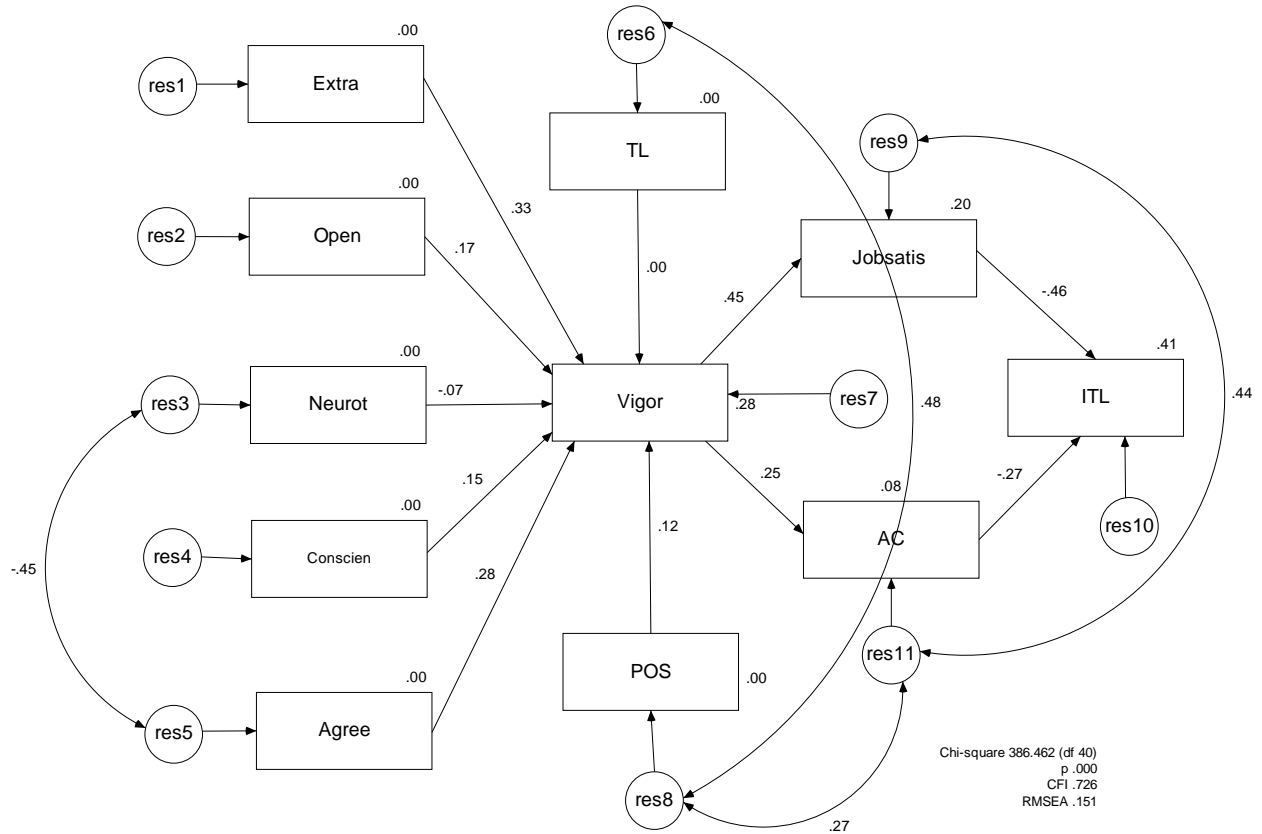
Note: Extra = extraversion, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Engage = engagement (Schaufeli), Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 8 Hypothesized model 1 with vigor as the measure of engagement



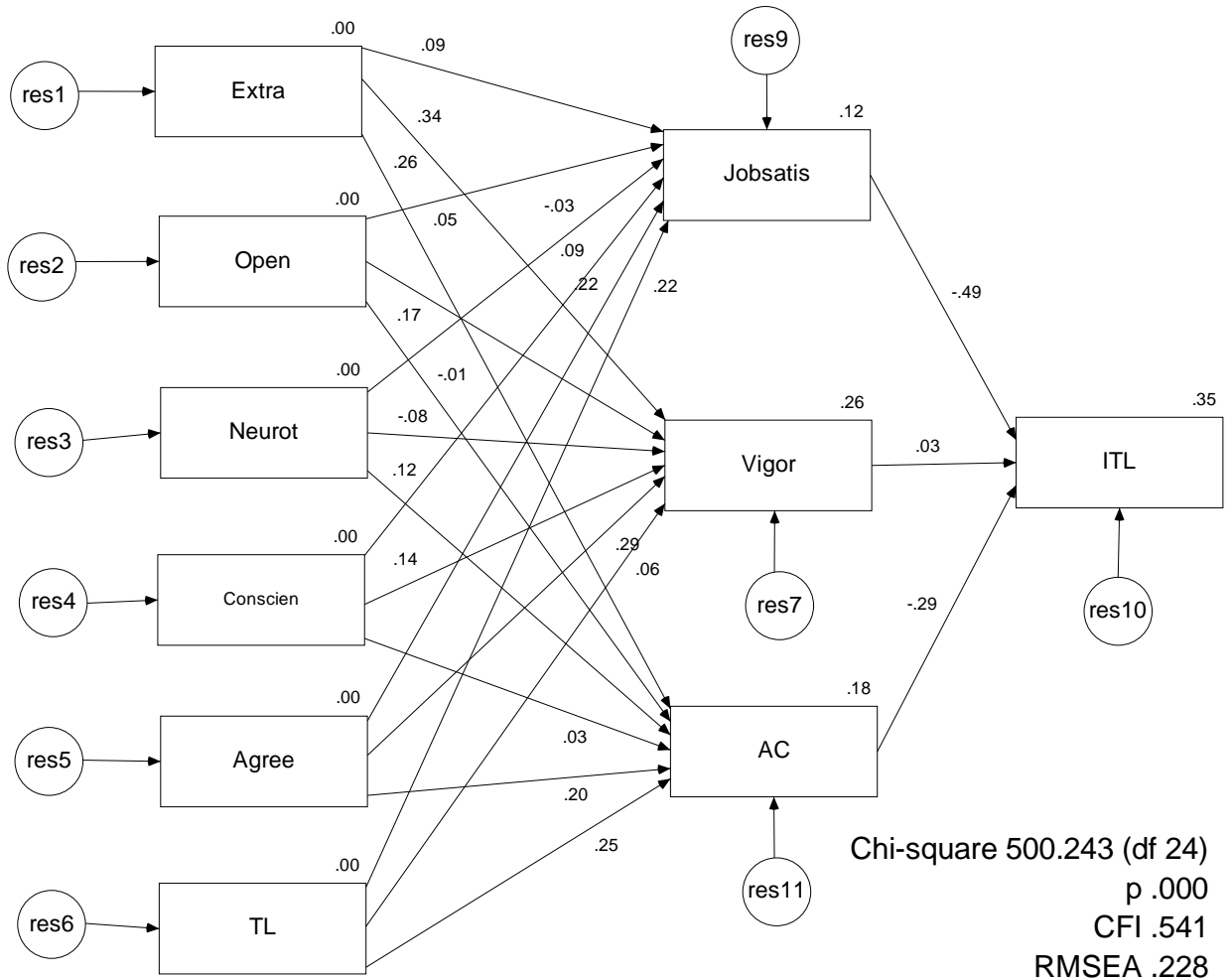
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Vigor = vigor (Shirom), POS = perceived organizational support, Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 9 Model 1 with modifications and vigor as the measure of engagement



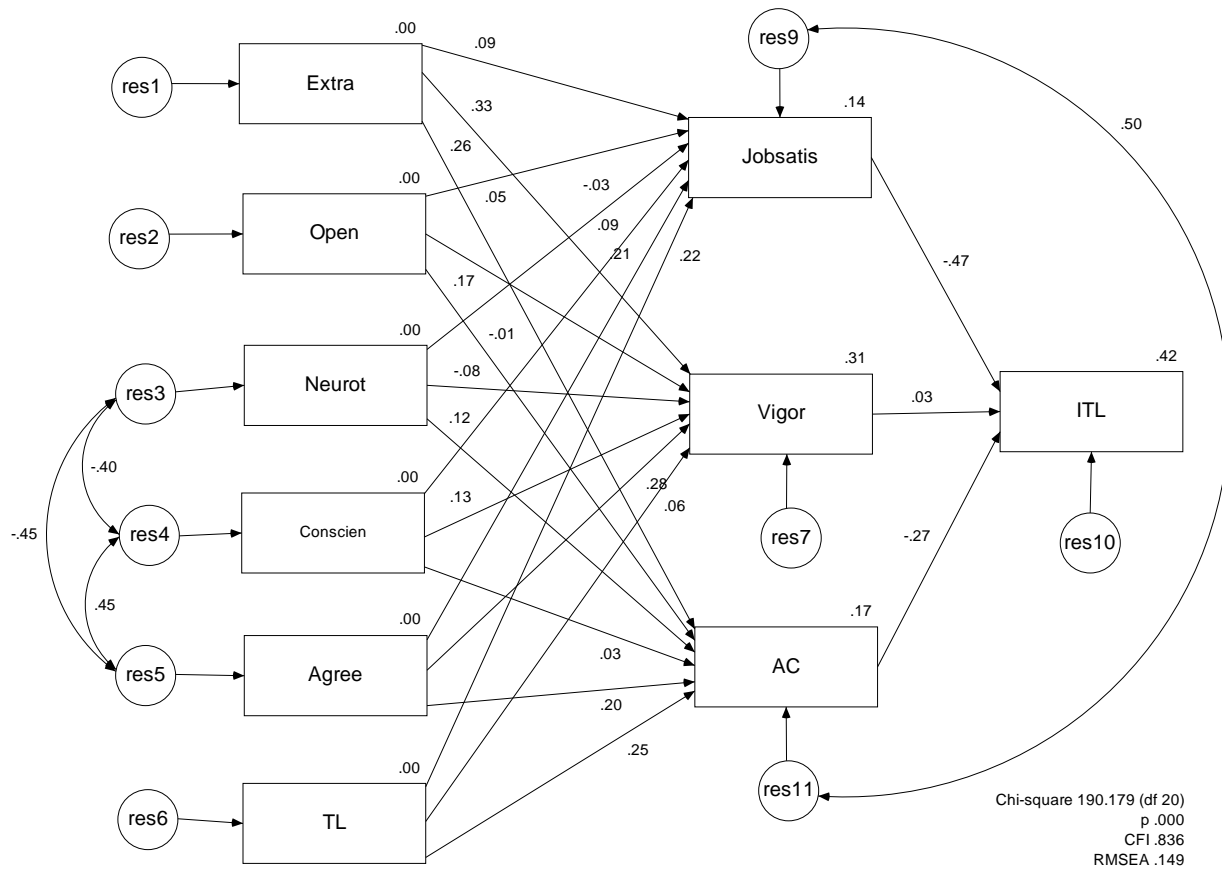
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Vigor = vigor (Shirom), POS = perceived organizational support, Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 10 Hypothesized model 2 with vigor as the measure of engagement



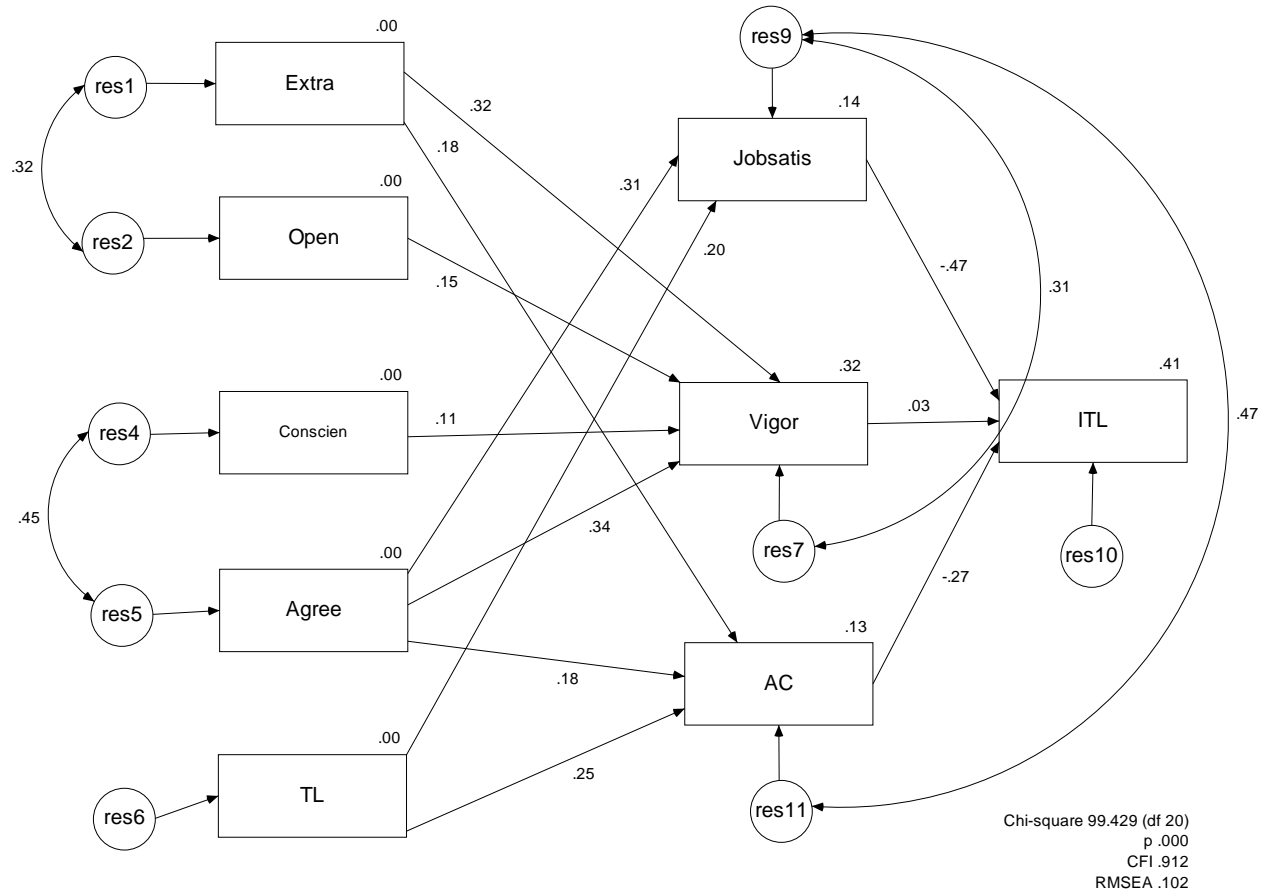
Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Vigor = vigor (Shirom), Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 11 Model 2 with modifications and vigor as the measure of engagement



Note: Extra = extraversion, Open = openness, Neurot = Neuroticism, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Vigor = vigor (Shirom), POS = perceived organizational support, Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

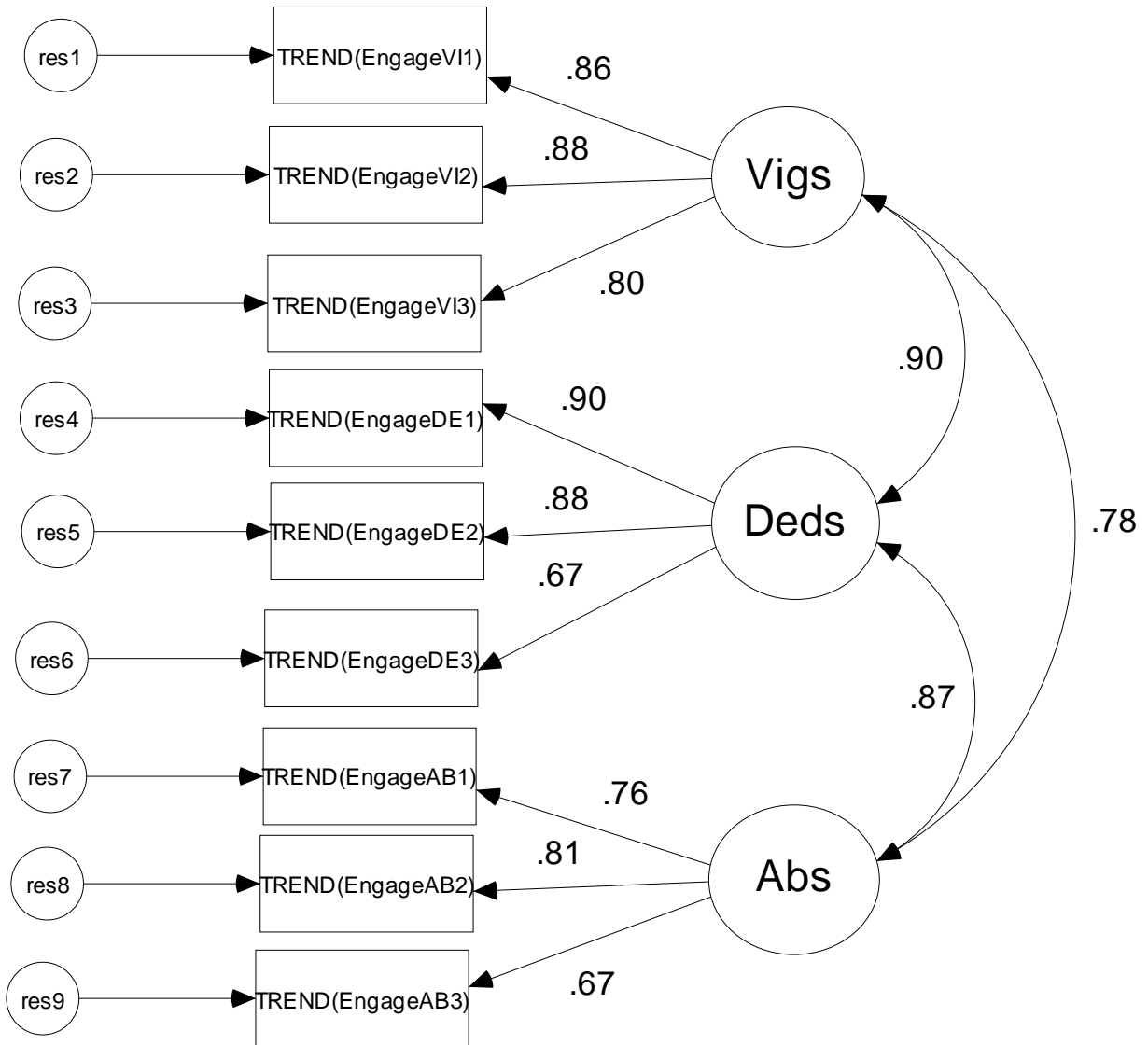
Figure 12 Exploratory Model 2 with more modifications and vigor as the measure of engagement



Note: Extra = extraversion, Open = openness, Conscien = conscientiousness, Agree = agreeableness, TL = transformational leadership, Vigor = vigor (Shirom), Job satis = job satisfaction, AC = affective commitment, ITL = intentions to leave

Figure 13 Three factor model of engagement (confirmatory factor analysis)

Chi-square = 250.154 (df 24)
 p = .000
 CFI .908 RMSEA .157



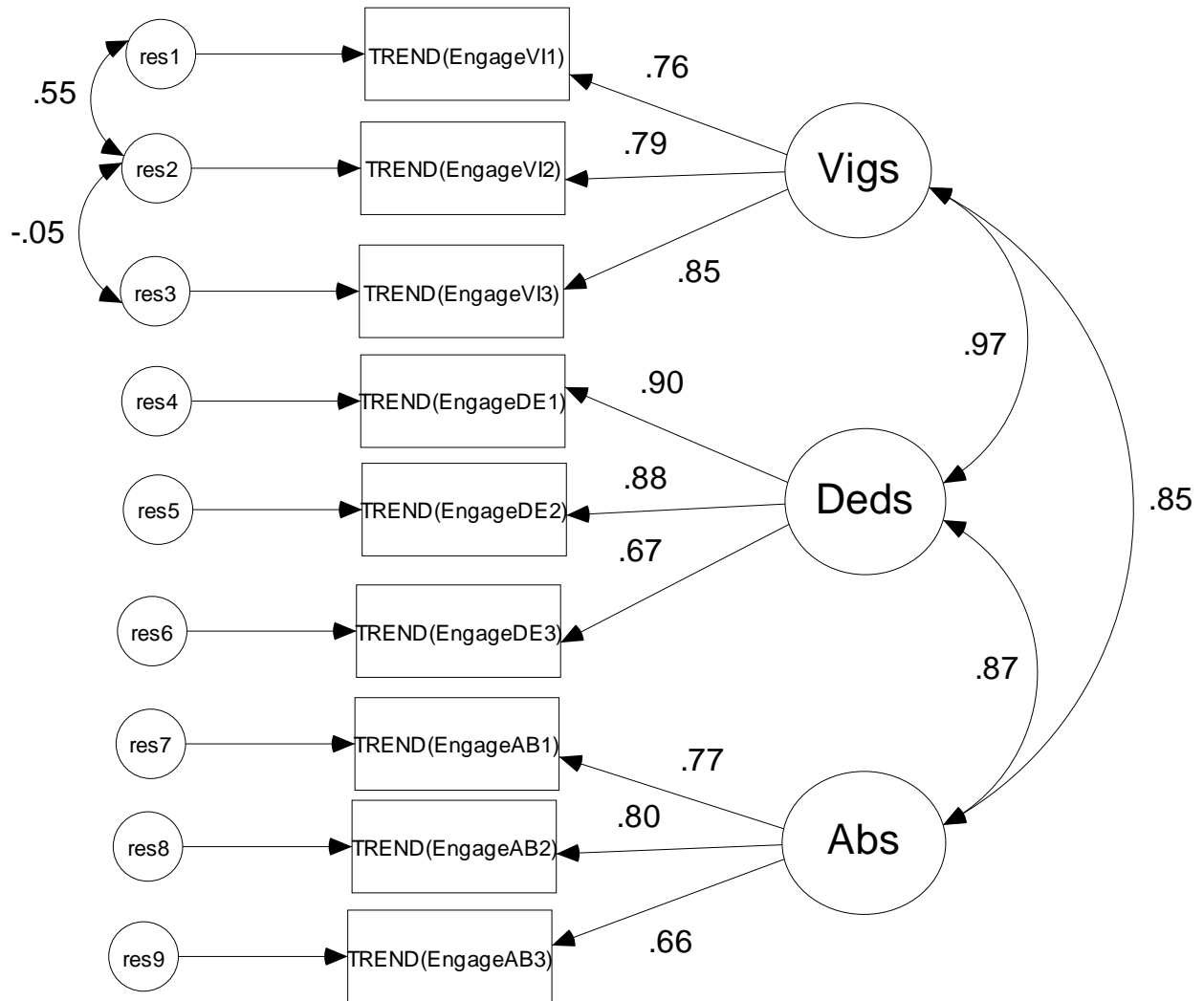
Note: Schaufeli measure of job engagement. Vigs = Vigor, Deds = Dedication, Abs = Absorption

Figure 14 Three factor model of engagement (with modifications)

Chi-square = 161.299 (df 22)

p = .000

CFI .943 RMSEA .129



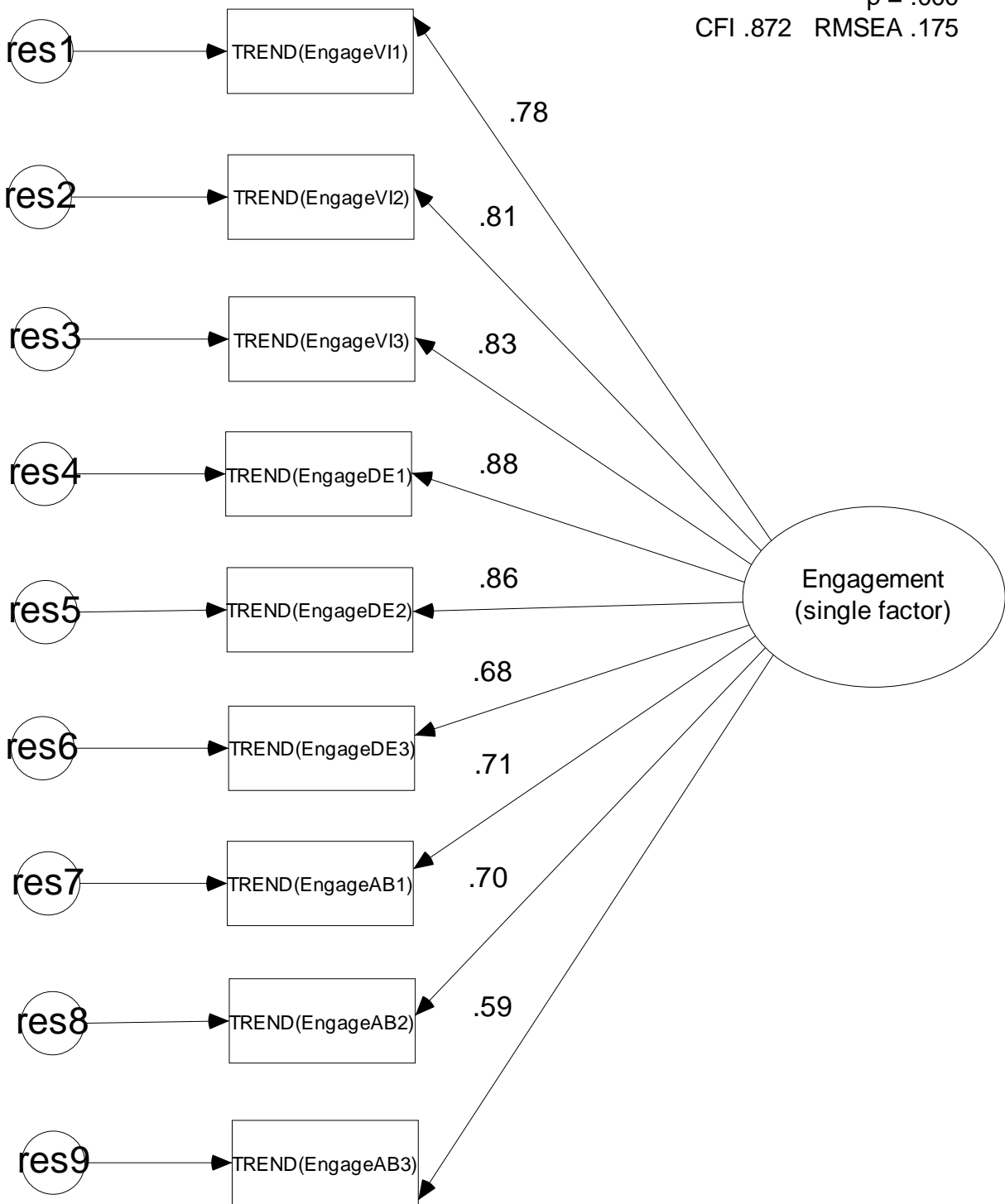
Note: Schaufeli measure of job engagement. Vigs = Vigor, Deds = Dedication, Abs = Absorption

Figure 15 One factor model of engagement (confirmatory factor analysis)

Chi-square = 341.607 (df 27)

p = .000

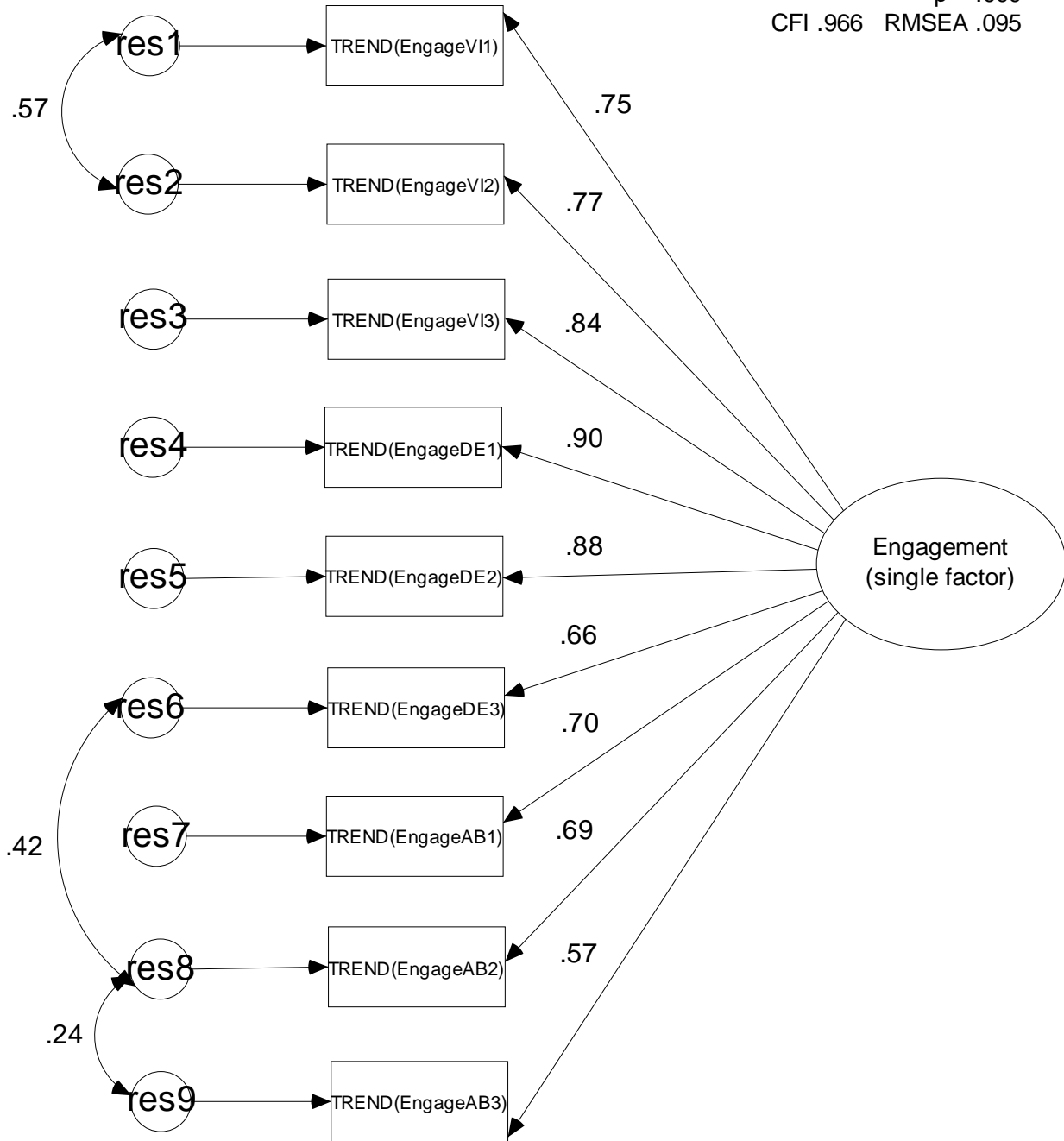
CFI .872 RMSEA .175



Note: Schaufeli measure of job engagement.

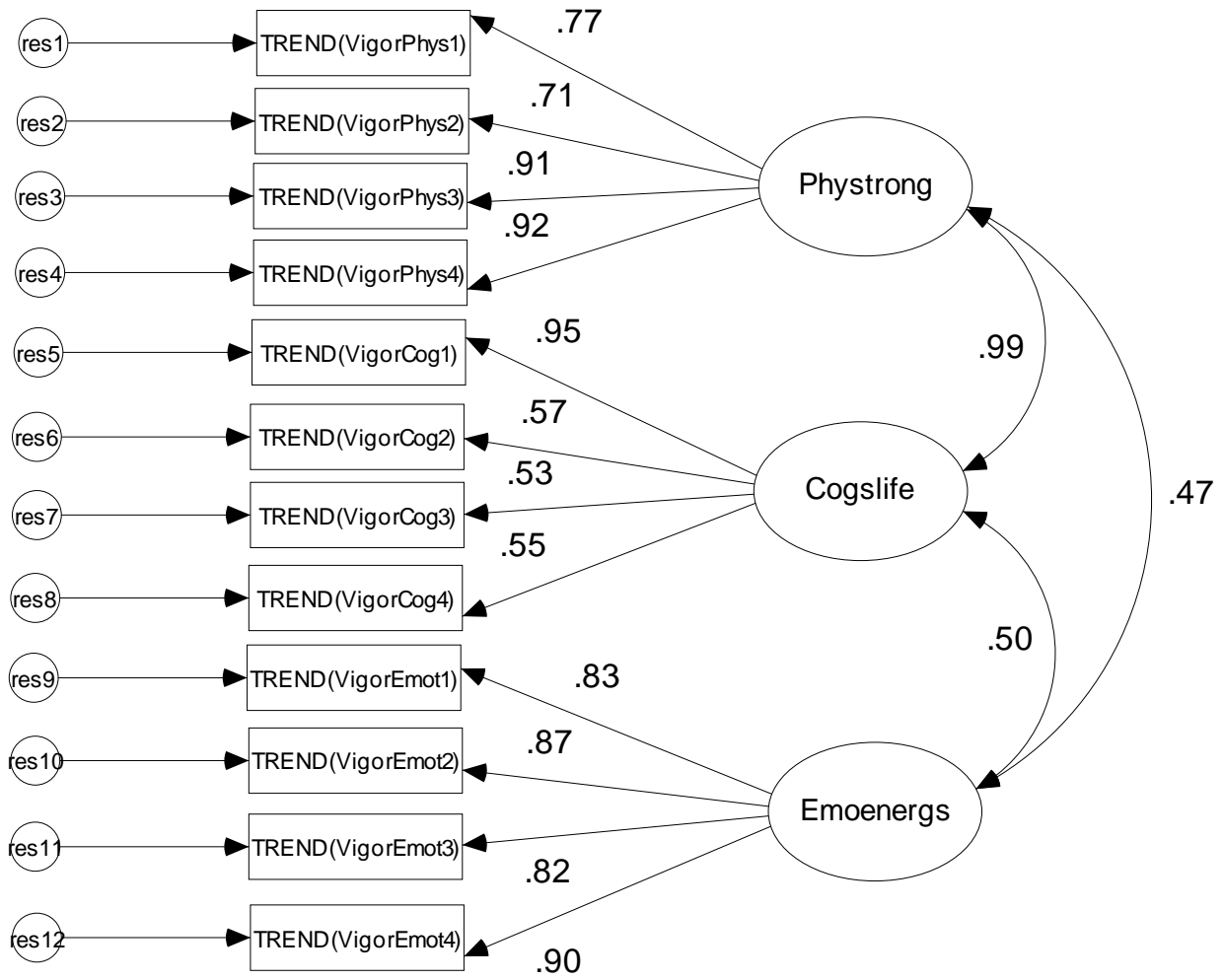
Figure 16 One factor model of engagement (with modifications)

Chi-square = 107.154 (df 24)
 p = .000
 CFI .966 RMSEA .095



Note: Schaufeli measure of job engagement.

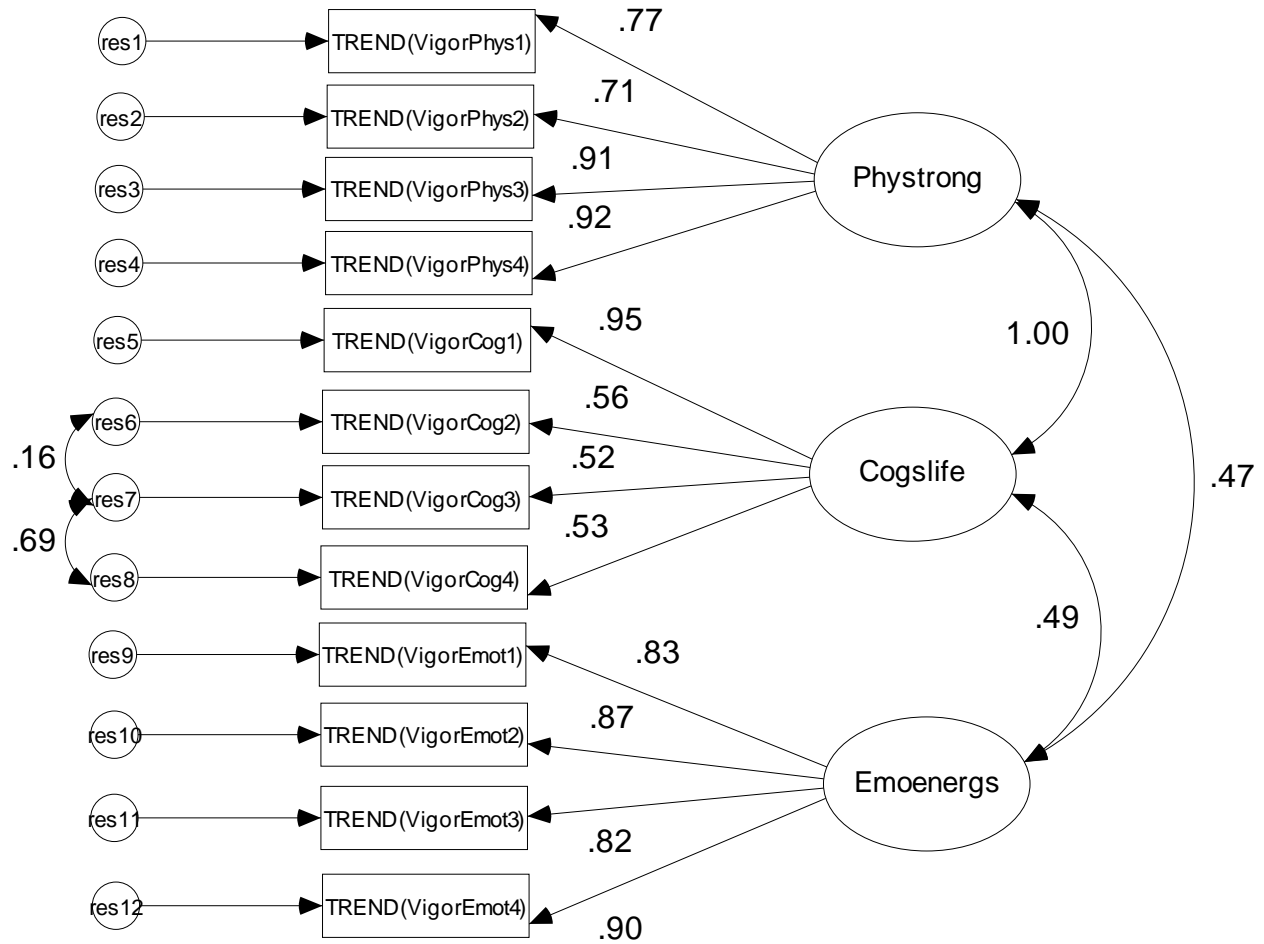
Figure 17 Three factor model of vigor (confirmatory factor analysis)



Vigor CFA (three factors)
 Chi-square 450.781 (df 51)
 p = .000
 CFI = .889 RMSEA = .143

Note: Shirom measure of vigor. Phy strong = physical strength, cogslife = cognitive liveliness, emoenergys = emotional energy.

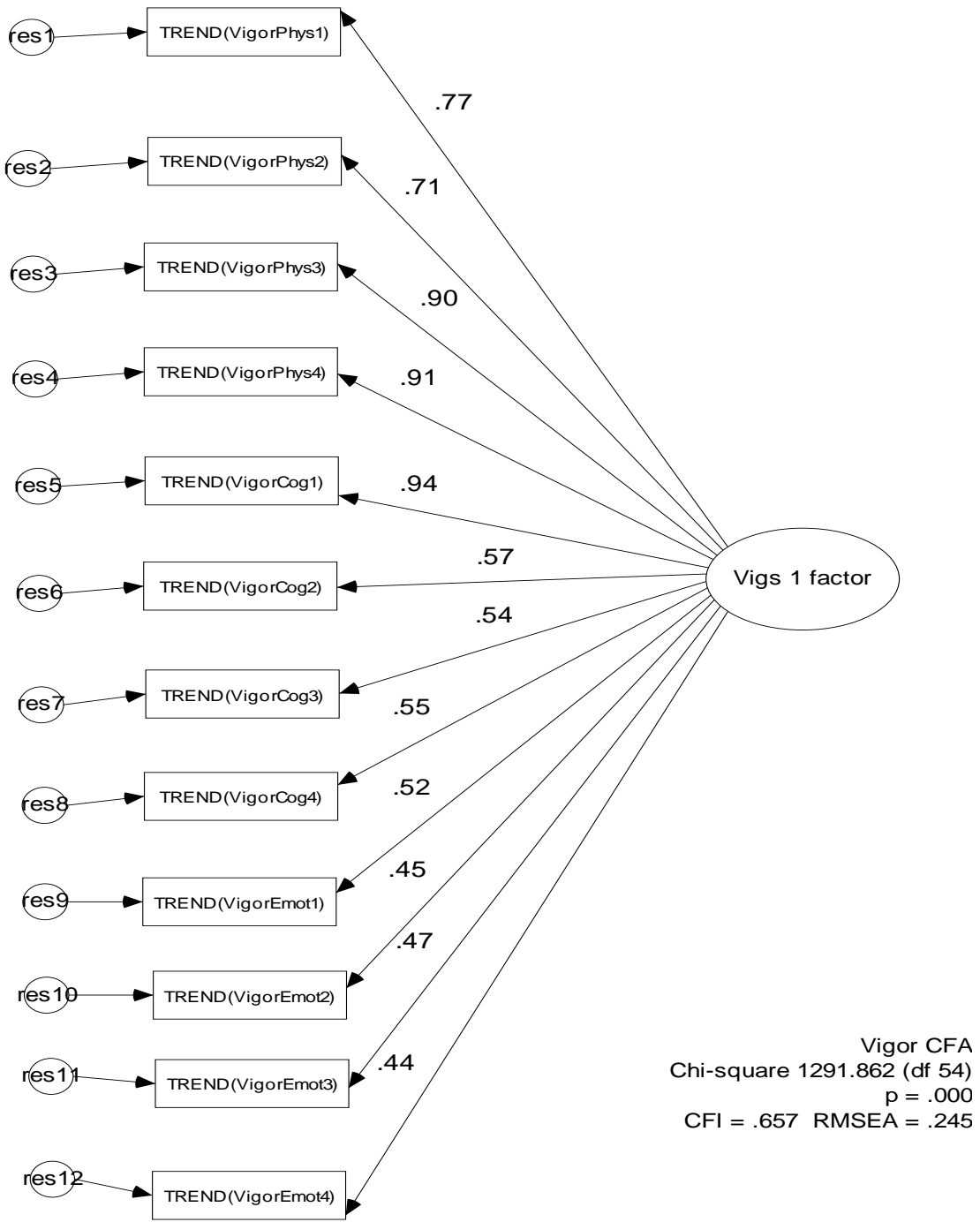
Figure 18 Three factor model of vigor (with modifications)



Vigor CFA (three factors)
 Chi-square 172.495 (df 49)
 p = .000
 CFI = .966 RMSEA = .081

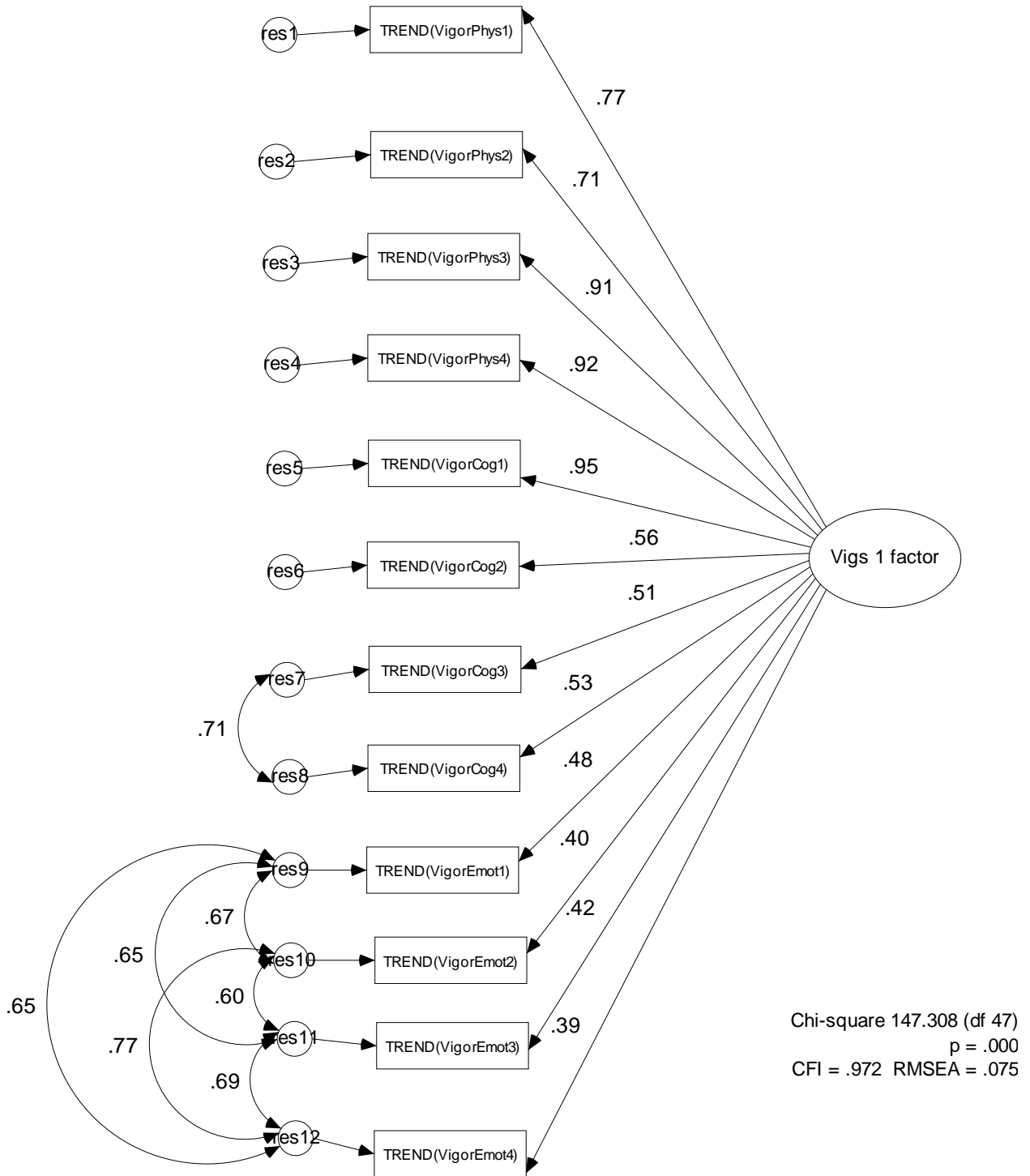
Note: Shirom measure of vigor. Phy strong = physical strength, cogslife = cognitive liveliness, emoenerg = emotional energy.

Figure 19 One factor model of vigor (confirmatory factor analysis)



Note: Shirom measure of vigor.

Figure 20 One factor model of vigor (with modifications)



Note: Shirom measure of vigor.

Table 1 Means, Standard Deviations, & Correlations

Means, standard deviations, correlations, and reliabilities (Cronbach's alpha) (N = 382, df = 380)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Manager Y=1	1														
2. Gender M=1	.157**	1													
3. Age	-.132*	.035	1												
4. Education	-.162**	-.290**	-.138**	1											
5. Tenure	-.178**	.147**	.467**	-.224**	1										
6. Per. Org. Support	-.282**	.038	-.025	.038	.005	(.91)									
7. Job Involvement	-.236**	-.008	.030	.050	.027	.182**	(.84)								
8. Vigor Total	-.225**	-.022	-.002	.074	-.006	.248**	.301**	(.91)							
9. Physical Strength	-.243**	-.077	.020	.037	-.015	.188**	.299**	.869**	(.89)						
10. Cognitive Liveliness	-.269**	-.184**	-.031	.094	-.027	.243**	.270**	.863**	.733**	(.82)					
11. Emotional Energy	-.058	.189**	.005	.056	.025	.190**	.184**	.766**	.445**	.444**	(.91)				
12. Engagement Total	-.273**	.074	.129*	-.047	.095	.314**	.535**	.662**	.650**	.559**	.446**	(.93)			
13. Engage. Vigor	-.251**	.067	.074	-.063	.046	.296**	.423**	.688**	.730**	.567**	.425**	.916**	(.87)		
14. Engage. Dedication	-.302**	.068	.164**	-.039	.116*	.379**	.504**	.618**	.573**	.539**	.433**	.940**	.815**	(.84)	
15. Engage. Absorption	-.191**	.068	.119*	-.022	.102	.181**	.547**	.493**	.456**	.415**	.360**	.879**	.669**	.759**	(.78)
Mean	1.78	1.49	3.32	3.77	3.19	27.73	27.02	61.48	18.96	20.28	22.25	47.17	14.92	16.43	15.81
Standard deviation	.42	.50	1.03	.93	1.13	6.02	6.44	10.26	4.14	3.93	4.28	9.58	3.80	3.39	3.31

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Note: Age (1 = under 25; 2 = 25-35; 3 = 36-45; 4 = 46-55; 5 = over 55); Education (1 = less than high school; 2 = high school/GED; 3 = some college; 4 = 4 year college/BA/BS; 5 = Master's; 6 = Professional or Doctoral degree/MD/JD/PhD); & Tenure (1 = < 1 year; 2 = 1-3; 3 = 4-10; 4 = 11-19; 5 = 20+ years).

Means, Standard Deviations, & Correlations (cont.)

Means, standard deviations, correlations, and reliabilities (Cronbach's alpha) ($N = 382$, $df = 380$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16. Job Satisfaction	-.208**	.071	.153**	-.029	.137**	.446**	.356**	.491**	.445**	.430**	.352**	.701**	.649**	.734**	.532**
17. Life Satisfaction	-.194**	.006	-.060	.123*	-.025	.205**	.084	.384**	.377**	.341**	.243**	.332**	.322**	.324**	.260**
18. Engagement Britt	-.223**	.108*	.047	-.013	.081	.198**	.444**	.456**	.399**	.349**	.388**	.585**	.506**	.579**	.519**
19. Extraversion	-.225**	.013	-.094	.065	-.120*	.155**	.232**	.479**	.497**	.410**	.291**	.388**	.415**	.335**	.303**
20. Agreeableness	-.057	.106*	.029	-.008	-.057	.251**	.151**	.474**	.396**	.292**	.485**	.399**	.410**	.393**	.282**
21. Conscientiousness	-.108*	.075	.066	-.088	-.021	.033	.185**	.373**	.398**	.305**	.230**	.331**	.340**	.319**	.242**
22. Neuroticism	.120*	.150**	.003	-.074	.146**	-.211**	-.102*	-.378**	-.397**	-.357**	-.195**	-.261**	-.299**	-.254**	-.152**
23. Openness	-.129*	-.255**	.038	.220**	-.206**	.080	.165**	.351**	.298**	.405**	.182**	.270**	.242**	.223**	.275**
24. Trans. Leadership	-.094	.059	-.018	.102	-.093	.523**	.117*	.193**	.100	.180**	.201**	.270**	.211**	.315**	.218**
25. Positive Affect	-.253**	.038	.031	.079	.008	.336**	.344**	.667**	.652**	.578**	.439**	.692**	.665**	.663**	.560**
26. Negative Affect	.088	.017	-.067	.023	.026	-.223**	-.072	-.234**	-.276**	-.231**	-.082	-.241**	-.280**	-.246**	-.124*
27. Org. Commit.	-.127*	.246**	.162**	-.318**	.361**	.212**	.257**	.074	.030	.030	.121*	.271**	.238**	.314**	.190**
28. Affective Commit.	-.227**	.171**	.094	-.161**	.242**	.527**	.397**	.318**	.278**	.251**	.264**	.525**	.487**	.560**	.386**
29. Contin. Commit.	.121*	.187**	.091	-.198**	.185**	-.242**	-.060	-.260**	-.258**	-.259**	-.136**	-.220**	-.207**	-.212**	-.182**
30. Normative Commit.	-.148**	.121*	.141**	-.278**	.289**	.119*	.164**	.087	.035	.068	.112*	.227**	.184**	.270**	.168**
31. Intent to Leave	.114*	-.074	-.134*	.087	-.172**	-.381**	-.248**	-.291**	-.216**	-.302**	-.213**	-.475**	-.425**	-.514**	-.360**
Mean	1.78	1.49	3.32	3.77	3.19	27.73	27.02	61.48	18.96	20.28	22.25	47.17	14.92	16.43	15.81
Standard deviation	.42	.50	1.03	.93	1.13	6.02	6.44	10.26	4.14	3.93	4.28	9.58	3.80	3.39	3.31

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Means, Standard Deviations, & Correlations (cont.)

Means, standard deviations, correlations, and reliabilities (Cronbach's alpha) ($N = 382$, $df = 380$)

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
16. Job Satisfaction	(.84)															
17. Life Satisfaction	.286**	(.84)														
18. Engagement Britt	.464**	.209**	(.82)													
19. Extraversion	.208**	.303**	.284**	(.85)												
20. Agreeableness	.350**	.277**	.358**	.253**	(.79)											
21. Conscientiousness	.242**	.286**	.328**	.241**	.447**	(.81)										
22. Neuroticism	-.234**	-.367**	-.140**	-.309**	-.454**	-.404**	(.79)									
23. Openness	.167**	.174**	.145**	.319**	.219**	.174**	-.219**	(.80)								
24. Trans. Leadership	.295**	.129*	.248**	.103*	.264**	.086	-.166**	.103*	(.95)							
25. Positive Affect	.564**	.434**	.507**	.476**	.436**	.444**	-.385**	.347**	.274**	(.90)						
26. Negative Affect	-.294**	-.280**	-.075	-.200**	-.335**	-.367**	.561**	-.201**	-.103*	-.248**	(.89)					
27. Org. Commit.	.305**	.018	.273**	.014	.145**	.081	.125*	-.129*	.127*	.127*	.039	(n/a)				
28. Affective Commit.	.579**	.247**	.358**	.295**	.282**	.147**	-.100	.117*	.307**	.455**	-.203**	.670**	(.88)			
29. Contin. Commit.	-.194**	-.287**	-.056	-.263**	-.153**	-.106*	.268**	-.272**	-.178**	-.313**	.304**	.540**	-.128*	(.74)		
30. Normative Commit.	.207**	.076	.239**	-.015	.162**	.127*	.083	-.109*	.120*	.100	-.025	.784**	.433**	.185**	(.68)	
31. Intent to Leave	-.621**	-.176**	-.330**	-.105*	-.250**	-.148**	.113*	-.052	-.203**	-.326**	.264**	-.416**	-.541**	.030	-.308**	(.92)
Mean	19.46	17.68	17.85	26.48	36.20	36.56	19.78	36.03	26.14	37.73	16.45	37.47	13.06	11.99	12.43	11.05
Standard deviation	3.53	3.80	2.22	5.48	4.41	4.45	4.73	5.48	6.57	5.86	5.80	6.54	3.53	3.43	2.96	4.91

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2 Regression Results for Hypothesis 3*Hierarchical regression (Criterion = Turnover intentions)*

Variables Entered	Beta	R	R ²	R ² Change
Job satisfaction	-.621**	.621	.386	.386**
Job satisfaction	-.464**			
Affective commitment	-.272**	.660	.435	.05**
Job satisfaction	-.439**			
Affective commitment	-.264**			
Engagement (Schaufeli)	-.075			
Physical strength (Shirom)	.227**			
Emotional energy (Shirom)	.033			
Cognitive Liveliness (Shirom)	-.175**			
Engagement (Britt)	-.030	.677	.46	.02**

* $p < 0.05$ level** $p < 0.01$ level

Table 3 Regression Results for Hypothesis 4: Personality & Engagement (Schaufeli)*Hierarchical regression (Criterion = Engagement - Schaufeli)*

Variables Entered	Beta	R	R ²	R ² Change
Extraversion	.259**			
Agreeableness	.253**			
Conscientiousness	.143**			
Neuroticism	.016			
Openness	.110*			
		.524	.274	.274**

Hierarchical regression (Criterion = Engagement - Schaufeli)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.692**			
		.692	.479	.479**
Positive affect	.615**			
Extraversion	.075*			
Agreeableness	.137**			
Conscientiousness	.003			
Neuroticism	.066			
Openness	.016			
		.705	.498	.019*

* $p < 0.05$ level** $p < 0.01$ level

Table 4 Regression Results for Hypothesis 4: Personality & Vigor (Shirom)*Hierarchical regression (Criterion = Vigor - Shirom)*

Variables Entered	Beta	R	R ²	R ² Change
Extraversion	.308**			
Agreeableness	.274**			
Conscientiousness	.119*			
Neuroticism	-.077			
Openness	.155**			
		.636	.405	.405**

Hierarchical regression (Criterion = Vigor - Shirom)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.667**			
		.667	.445	.445**
Positive affect	.449**			
Extraversion	.173**			
Agreeableness	.190**			
Conscientiousness	.016			
Neuroticism	-.040			
Openness	.087*			
		.724	.524	.079**

* $p < 0.05$ level** $p < 0.01$ level

Table 5 Regression Results for Hypothesis 4: Personality & Engagement (Britt)*Hierarchical regression (Criterion = Engagement - Britt)*

Variables Entered	Beta	R	R ²	R ² Change
Extraversion	.201**			
Openness	.014			
Neuroticism	.133*			
Conscientiousness	.210**			
Agreeableness	.270**			
		.454	.206	.206**

Hierarchical regression (Criterion = Engagement - Britt)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.507**			
		.507	.257	.257**
Positive affect	.418**			
Extraversion	.076			
Openness	-.050			
Neuroticism	.167**			
Conscientiousness	.115*			
Agreeableness	.192**			
		.556	.309	.052**

* $p < 0.05$ level** $p < 0.01$ level

Table 6 Regression Results for Hypothesis 4: Personality & Engagement (Schaufeli)*Regression (Criterion = Engagement's Vigor - Schaufeli)*

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.550**			
Extraversion	.126**			
Openness	-.019			
Neuroticism	.017			
Conscientiousness	.011			
Agreeableness	.146**			
		.686	.471	.471**

Regression (Criterion = Engagement's Absorption - Schaufeli)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.520**			
Extraversion	.044			
Openness	.089			
Neuroticism	.116*			
Conscientiousness	-.003			
Agreeableness	.079			
		.577	.333	.333**

Regression (Criterion = Engagement's Dedication - Schaufeli)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.613**			
Extraversion	.028			
Openness	-.020			
Neuroticism	.053			
Conscientiousness	-.001			
Agreeableness	.148**			
		.675	.456	.456**

* $p < 0.05$ level** $p < 0.01$ level

Table 7 Regression Results for Hypothesis 4: Personality & Vigor (Shirom)

Regression (Criterion = Vigor's physical strength - Shirom)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.440**			
Extraversion	.214**			
Openness	.028			
Neuroticism	-.093*			
Conscientiousness	.079			
Agreeableness	.066			
		.705	.497	.497**

Regression (Criterion = Vigor's emotional energy - Shirom)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.279**			
Extraversion	.102*			
Openness	-.005			
Neuroticism	.106*			
Conscientiousness	-.059			
Agreeableness	.413**			
		.564	.318	.318**

Regression (Criterion = Vigor's cognitive liveliness - Shirom)

Variables Entered	Beta	R	R ²	R ² Change
Positive affect	.407**			
Extraversion	.114*			
Openness	.202**			
Neuroticism	-.122*			
Conscientiousness	.023			
Agreeableness	-.024			
		.638	.408	.408**

* $p < 0.05$ level

** $p < 0.01$ level

Table 8 Regression Results for Hypothesis 5: Engagement (Schaufeli), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.667	.445	.007*

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.026
Gender	-.052	.012	.030	.030
Age group	-.042	-.033	.019	.024
Education level	.069	.088	.056	.045
Tenure	-.114	-.121*	-.079	-.079
Extraversion		.053	.016	.032
Agreeableness		-.177**	-.098	-.090
Conscientiousness		.060	.021	.022
Neuroticism		-.028	-.042	-.034
Openness		.050	.036	.042
Positive affect		-.342**	.009	.059
Job satisfaction			-.638**	-.576**
Engagement (Schaufeli)				-.142*

* $p < 0.05$ level

** $p < 0.01$ level

Table 9 Regression Results for Hypothesis 5: Vigor (Shirom), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.662	.439	.000

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.016
Gender	-.052	.012	.030	.029
Age group	-.042	-.033	.019	.018
Education level	.069	.088	.056	.056
Tenure	-.114	-.121*	-.079	-.078
Extraversion		.053	.016	.020
Agreeableness		-.177**	-.098	-.094
Conscientiousness		.060	.021	.022
Neuroticism		-.028	-.042	-.042
Openness		.050	.036	.039
Positive affect		-.342**	.009	.017
Job satisfaction			-.638**	-.634**
Vigor (Shirom)				-.024

* $p < 0.05$ level

** $p < 0.01$ level

Table 10 Regression Results for Hypothesis 5: Engagement (Britt), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	<i>R</i>	<i>R</i> ²	<i>R</i> ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.663	.440	.002

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.021
Gender	-.052	.012	.030	.032
Age group	-.042	-.033	.019	.017
Education level	.069	.088	.056	.056
Tenure	-.114	-.121*	-.079	-.078
Extraversion		.053	.016	.019
Agreeableness		-.177**	-.098	-.091
Conscientiousness		.060	.021	.027
Neuroticism		-.028	-.042	-.034
Openness		.050	.036	.035
Positive affect		-.342**	.009	.059
Job satisfaction			-.638**	-.625**
Engagement (Britt)				-.052

* $p < 0.05$ level

** $p < 0.01$ level

Table 11 Regression Results for Hypothesis 5: Engagement's Vigor (Schaufeli), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.664	.440	.002

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.020
Gender	-.052	.012	.030	.029
Age group	-.042	-.033	.019	.019
Education level	.069	.088	.056	.049
Tenure	-.114	-.121*	-.079	-.081
Extraversion		.053	.016	.026
Agreeableness		-.177**	-.098	-.093
Conscientiousness		.060	.021	.022
Neuroticism		-.028	-.042	-.041
Openness		.050	.036	.037
Positive affect		-.342**	.009	.033
Job satisfaction			-.638**	-.610**
Vigor (Schaufeli)				-.072

* $p < 0.05$ level

** $p < 0.01$ level

Table 12 Regression Results for Hypothesis 5: Engagement's Absorption (Schaufeli), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.664	.441	.002

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.016
Gender	-.052	.012	.030	.031
Age group	-.042	-.033	.019	.021
Education level	.069	.088	.056	.054
Tenure	-.114	-.121*	-.079	-.076
Extraversion		.053	.016	.021
Agreeableness		-.177**	-.098	-.098
Conscientiousness		.060	.021	.021
Neuroticism		-.028	-.042	-.036
Openness		.050	.036	.043
Positive affect		-.342**	.009	.031
Job satisfaction			-.638**	-.619**
Absorption (Schaufeli)				-.064

* $p < 0.05$ level

** $p < 0.01$ level

Table 13 Regression Results for Hypothesis 5: Engagement's Dedication (Schaufeli), Job Satisfaction & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.662	.438	.258**
4	.673	.454	.015**

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.016	-.039
Gender	-.052	.012	.030	.030
Age group	-.042	-.033	.019	.033
Education level	.069	.088	.056	.044
Tenure	-.114	-.121*	-.079	-.082
Extraversion		.053	.016	.030
Agreeableness		-.177**	-.098	-.083
Conscientiousness		.060	.021	.023
Neuroticism		-.028	-.042	-.033
Openness		.050	.036	.038
Positive affect		-.342**	.009	.069
Job satisfaction			-.638**	-.532**
Dedication (Schaufeli)				-.210**

* $p < 0.05$ level

** $p < 0.01$ level

Table 14 Regression Results for Hypothesis 5: Engagement (Schaufeli), Job Satisfaction, Affective Commitment, & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.695	.483	.302**
4	.698	.488	.005

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.040	-.048
Gender	-.052	.012	.055	.055
Age group	-.042	-.033	-.006	-.001
Education level	.069	.088	.014	.006
Tenure	-.114	-.121*	-.025	-.025
Positive affect		-.342**	.059	.100
Extraversion		.053	.059	.072
Agreeableness		-.177**	-.077	-.071
Conscientiousness		.060	-.004	-.003
Neuroticism		-.028	-.024	-.019
Openness		.050	.054	.059
Job satisfaction			-.517**	-.467**
Affective commitment			-.291**	-.285**
Engagement (Schaufeli)				-.121

* $p < 0.05$ level

** $p < 0.01$ level

Table 15 Regression Results for Hypothesis 5: Vigor Sub-Components (Shirom), Job Satisfaction, Affective Commitment, & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.695	.483	.302**
4	.712	.506	.024**

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.040	-.055
Gender	-.052	.012	.055	.032
Age group	-.042	-.033	-.006	-.029
Education level	.069	.088	.014	.010
Tenure	-.114	-.121*	-.025	-.013
Positive affect		-.342**	.059	.065
Extraversion		.053	.059	.047
Agreeableness		-.177**	-.077	-.103*
Conscientiousness		.060	-.004	-.003
Neuroticism		-.028	-.024	-.040
Openness		.050	.054	.096*
Job satisfaction			-.517**	-.494**
Affective commitment			-.291**	-.296**
Physical strength				.161*
Cognitive liveliness				-.248**
Emotional energy				.033

* $p < 0.05$ level

** $p < 0.01$ level

Table 16 Regression Results for Hypothesis 5: Engagement (Britt), Job Satisfaction, Affective Commitment, & Personality

Hierarchical regressions (Criterion = Intent to leave)

Step	R	R ²	R ² Change
1	.216	.047	.047**
2	.425	.181	.134**
3	.695	.483	.302**
4	.696	.484	.002

Beta weights

Variables entered	Regressions steps			
	1	2	3	4
Manager	.102	.028	-.040	-.045
Gender	-.052	.012	.055	.056
Age group	-.042	-.033	-.006	-.007
Education level	.069	.088	.014	.014
Tenure	-.114	-.121*	-.025	-.024
Positive affect		-.342**	.059	.072
Extraversion		.053	.059	.062
Agreeableness		-.177**	-.077	-.070
Conscientiousness		.060	-.004	.002
Neuroticism		-.028	-.024	-.017
Openness		.050	.054	.053
Job satisfaction			-.517**	-.505**
Affective commitment			-.291**	-.290**
Engagement (Britt)				-.051

* $p < 0.05$ level

** $p < 0.01$ level

Table 17 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor Variable for Engagement (Schaufeli)

Hierarchical regressions (Criterion = Engagement - Schaufeli)

Step	R	R ²	R ² Change
1	.308	.095	.095**
2	.722	.521	.427**
3	.727	.528	.006*

Beta weights

Variables entered	Regressions steps		
	1	2	3
Manager	-.286**	-.100*	-.096*
Gender	.101	.017	.011
Age group	.085	.068	.067
Education level	-.062	-.099*	-.106*
Tenure	-.023	.034	.042
Extraversion		.086	.090*
Agreeableness		.115*	.099*
Conscientiousness		-.017	-.008
Neuroticism		.042	.046
Openness		.032	.033
Positive affect		.590**	.568**
Transformational leadership			.087*

* $p < 0.05$ level

** $p < 0.01$ level

Table 18 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor Variable for Vigor (Shirom)

Hierarchical regressions (Criterion = Vigor - Shirom)

Step	R	R ²	R ² Change
1	.228	.052	.052**
2	.719	.517	.465**
3	.719	.517	.000

Beta weights

Variables entered	Regressions steps		
	1	2	3
Manager	-.231**	-.035	-.035
Gender	.031	-.038	-.038
Age group	-.018	-.046	-.046
Education level	.024	-.003	-.003
Tenure	-.033	.073	.073
Extraversion		.166**	.166**
Agreeableness		.203**	.203**
Conscientiousness		.038	.038
Neuroticism		-.037	-.037
Openness		.091*	.091*
Positive affect		.419**	.420**
Transformational leadership			-.001

* $p < 0.05$ level

** $p < 0.01$ level

Table 19 Regression Results for Hypothesis 6: Transformational Leadership as a Predictor Variable for Engagement (Britt)

Hierarchical regressions (Criterion = Engagement - Britt)

Step	R	R ²	R ² Change
1	.271	.074	.074**
2	.567	.322	.249**
3	.578	.334	.012*

Beta weights

Variables entered	Regressions steps		
	1	2	3
Manager	-.249**	-.122*	-.117*
Gender	.145**	.046	.037
Age group	-.003	-.014	-.016
Education level	-.010	-.016	-.025
Tenure	.016	.044	.055
Extraversion		.050	.055
Agreeableness		.178**	.156**
Conscientiousness		.110*	.122*
Neuroticism		.148**	.153**
Openness		-.029	-.029
Positive affect		.391**	.361**
Transformational leadership			.119*

* $p < 0.05$ level

** $p < 0.01$ level

Table 20 Regression Weights Analysis: Test of Hypothesis 7

*Relative weights analysis of engagement sub-scale measures
(Criterion = Intent to leave; $R^2 = .300$)*

	Raw Relative Weights
Vigor (Shirom) Physical strength	.018
Vigor (Shirom) Cognitive liveliness	.032
Vigor (Shirom) Emotional energy	.010
Engagement (Schaufeli) Vigor	.062
Engagement (Schaufeli) Dedication	.109
Engagement (Schaufeli) Absorption	.035
Engagement (Britt)	.034

	Relative Weights as Percentage of R^2
Vigor (Shirom) Physical strength	6.0%
Vigor (Shirom) Cognitive liveliness	10.8%
Vigor (Shirom) Emotional energy	3.3%
Engagement (Schaufeli) Vigor	20.6%
Engagement (Schaufeli) Dedication	36.2%
Engagement (Schaufeli) Absorption	11.7%
Engagement (Britt)	11.4%

*Relative weights analysis of overall engagement measures
(Criterion = Intent to leave; $R^2 = .231$)*

	Raw Relative Weights
Vigor (Shirom)	.034
Engagement (Schaufeli)	.148
Engagement (Britt)	.050

	Relative Weights as Percentage of R^2
Vigor (Shirom)	14.6%
Engagement (Schaufeli)	63.8%
Engagement (Britt)	21.6%

Table 21 Regression Weights Analysis: Test of Hypothesis 8

*Relative weights analysis of job attitude measures
(Criterion = Intent to leave; $R^2 = .439$)*

	Raw Relative Weights
Engagement (Schaufeli)	.072
Perceived org. support	.047
Job involvement	.014
Job satisfaction	.181
Life satisfaction	.007
Affective commitment	.118

	Relative Weights as Percentage of R-square
Engagement (Schaufeli)	16.3%
Perceived org. support	10.8%
Job involvement	3.2%
Job satisfaction	41.2%
Life satisfaction	1.6%
Affective commitment	26.9%

Table 22 Regression Weights Analysis: Test of Hypothesis 8

*Relative weights analysis of job attitude measures
(Criterion = Intent to leave; $R^2 = .462$)*

	Raw Relative Weights
Engagement (Schaufeli)	.057
Perceived org. support	.043
Job involvement	.011
Job satisfaction	.161
Life satisfaction	.005
Affective commitment	.111
Vigor physical strength	.012
Vigor cognitive liveliness	.027
Vigor emotional energy	.008
Britt's engagement	.026

	Relative Weights as Percentage of R^2
Engagement (Schaufeli)	12.4%
Perceived org. support	9.4%
Job involvement	2.4%
Job satisfaction	34.8%
Life satisfaction	1.2%
Affective commitment	24.1%
Vigor physical strength	2.7%
Vigor cognitive liveliness	5.8%
Vigor emotional energy	1.6%
Britt's engagement	5.6%
