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AN EXPERIMENTAL STUDY OF THE IMPACT OF PSYCHOLOGICAL CAPITAL
ON PERFORMANCE, ENGAGEMENT, AND THE CONTAGION EFFECT

by

Timothy D. Hodges

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Interdepartmental Area of Business (Management)

Under the Supervision of Professor Fred Luthans

Lincoln, Nebraska

April, 2010

AN EXPERIMENTAL STUDY OF THE IMPACT OF PSYCHOLOGICAL CAPITAL
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Timothy D. Hodges, Ph.D.

University of Nebraska, 2010

Adviser: Fred Luthans

Psychological Capital, or PsyCap, is a core construct consisting of the positive psychological resources of efficacy, hope, optimism, and resilience. Previous research has consistently linked PsyCap to workplace outcomes including employee attitudes, behaviors, and performance. Further research has explored the ways in which PsyCap can be developed through relatively brief workplace interventions. The present study focuses on PsyCap development and the relationship to employee engagement and performance. In an experimental design with random assignment of subjects to control group (n = 52 managers and 152 associates) and treatment group (n = 58 managers and 239 employees), a field sample of managers in a financial services organization participated in a PsyCap micro-intervention. Although the financial services industry is in the midst of historical challenges, employees at the field site were remarkably positive throughout the study. High scores at the time of the pre-test indicate the possibility of a ceiling effect which may limit the significance of the differences in groups. Mean score differences between pre-test and post-test for the treatment group were generally in the hypothesized directions. Results indicate initial evidence supporting the presence of a contagion effect where employees reporting to the managers participating in the PsyCap intervention experienced an increase in their own PsyCap levels over a six-week period. Post-hoc

analyses found significant correlations between PsyCap, employee engagement, and performance. The article concludes with a discussion of several practical implications and directions for future research.

AUTHOR'S ACKNOWLEDGEMENTS

There are many people who have helped to make this project possible. First, I wish to express my sincere appreciation to the chair of my graduate committee, Fred Luthans, both for his leadership in the field of Psychological Capital and for his mentorship throughout this project. Fred's encouragement, timely feedback, and excellent partnership helped make this entire experience enjoyable. I also appreciate the contributions of the other members of my graduate committee, Sang Lee, Les Digman, and Rich Torraco. Their thoughtful questions and feedback helped refine both the research proposal and the final dissertation.

I am fortunate to have many great partnerships with leaders in the organization that served as a field site for this project. Katie, Kim, Suzie, and many others were flexible, responsive, transparent, supportive, and just plain enjoyable to work with throughout the entire research process.

I also wish to thank Connie Rath, Shane Lopez, Jim Harter, Mike McDonald, and countless others at Gallup for their encouragement, support, and helpful conversations along the way. I am privileged to have the opportunity to work in an engaged, strengths-based organization that is committed to the development of each associate.

Finally, and most of all, I wish to acknowledge the unconditional love shown to me by my family – Jennifer, Liam, Ainsley, and Kallan – who have been encouraging, understanding, and selfless throughout my graduate studies. Successfully completing the degree program would not have been possible without their love and support.

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CHAPTER ONE: INTRODUCTION TO THE STUDY

On March 18, 1968, New York Senator and newly-announced presidential candidate Robert F. Kennedy addressed a large group of students, faculty, and community members on the campus of the University of Kansas in Lawrence, Kansas. This speech was delivered during one of the more tumultuous times in America's history. Just five years removed from President John F. Kennedy's assassination, America was engaged in an emotional debate over the major issues of the day. The headline issue was foreign policy, with Cold War-era tensions running high on the heels of the Tet Offensive in Vietnam. America was also dealing escalating civil rights issues closer to home, with the assassination of Dr. Martin Luther King, Jr., set to take place just three weeks later.

Economic justice was a major component of Robert F. Kennedy's presidential campaign platform. Kennedy described in great detail the plight of starving children in Mississippi, suicidal Native Americans on reservations, unemployed miners in Appalachia, and school children toiling in the black ghettos. Calling for an end to the disgraces of this "other America," Kennedy continued:

And this is one of the great tasks of leadership for us, as individuals and citizens this year. But even if we act to erase material poverty, there is another greater task, it is to confront the poverty of satisfaction - purpose and dignity - that afflicts us all. Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product - if we judge the United States of America by that - that

Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children.

Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans (John F. Kennedy Presidential Library & Museum, n.d.).

Positive Psychology

Thirty years after Kennedy's speech, American Psychological Association (APA) President Martin Seligman leveraged similar themes in his address to the APA membership. In addition to encouraging more work focused on relieving ethnic conflict, Seligman (1999) called for a new science focused on improving the lives of people, to be

known as “positive psychology.” The field of psychology, in Seligman’s view, had moved from its original roots in making the lives of people more fulfilling and productive, to a post-World War II focus almost exclusively on healing and the alleviation of mental illness without enough attention given to improving the lives of all people. He called for psychologists to study actions that lead to well-being, to positive individuals, to flourishing communities, and to a just society. Although America had enjoyed much prosperity, the rate of depression had increased more than tenfold in the previous 40 years. Seligman called for increasing amounts of research and scholarship with an increased focus on the discovery and development of positive attributes about individuals that would not only increase their level of well-being, but would help buttress the negativity and symptoms of depression.

Well-Being/Happiness

Our desire for happiness – for obtaining that which makes life worthwhile – has been articulated since Thomas Jefferson and the Framers penned the Declaration of Independence more than 230 years ago. More than merely an inspirational ambition, happiness has been linked to a number of desirable outcomes (Diener, Suh, Lucas, & Smith, 1999).

Acknowledging the substantial and meaningful outcomes associated with increased levels of happiness, Lyubomirsky, Sheldon, and Schkade (2005) proposed their model of happiness known as the architecture of sustainable happiness. This integrative model notes that there are both state and trait factors that comprise the portrait of well-being. Further, they suggest that three primary factors – genetic set point or set range, life circumstances, and intentional activity – impact one’s level of happiness. Previous

research suggests that nearly half of the variance in reported levels of happiness is accounted for by genetics (Diener et al., 1999). Life circumstances likely account for about another 10% (Argyle, 1999; Diener et al., 1999). Thus, as much as 40% of the happiness population variation is left to be accounted for via levels of intentional activity (Lyubomirsky et al., 2005). Furthermore, preliminary research by Sheldon and Lyubomirsky (2006) suggests that it is the intentional activity – the aspect which we can most readily manipulate through our behaviors, cognitions, and volitions – that is most resistant to hedonic adaptation (Fredrick & Lowenstein, 1999) and most likely to have a sustainable positive influence over time.

Positive Organizational Behavior and Psychological Capital

Also focused on improving the performance of individuals through positivity intervention, Luthans (2002a, 2002b) introduced Positive Organizational Behavior (POB). This research stream focuses on state-like concepts that can be validly “measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002b, p. 59). Psychological resource capacities such as self-efficacy (Bandura, 1997; Stajkovic & Luthans, 1998b), hope (Snyder, 2000), optimism (Scheier & Carver, 1985), and resilience (Masten, 2001) meet these criteria for inclusion and have received the majority of attention from POB researchers.

Over time and across a variety of contexts, researchers empirically tested the notion that positive psychological resource capacities meeting the POB criteria for inclusion may have more to contribute when viewed as a multidimensional, latent core construct. This Psychological Capital construct, or PsyCap, has been the subject of considerable theory and research over the past several years. PsyCap researchers have

developed (Luthans, Youssef, & Avolio, 2007a) and validated (Luthans, Avolio, Avey, & Norman, 2007) measures of PsyCap. Taken to the workplace, preliminary empirical evidence supports the PsyCap latent core construct and its relationship to performance (Luthans, Avey, Avolio, & Peterson, in press; Luthans, Avolio, et al., 2007) in multiple cultural contexts (Luthans, Avolio, Walumbwa, & Li, 2005).

Further research has addressed the notion that PsyCap is open to development. Initial developmental frameworks (Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans et al., in press) suggest that positive workplace outcomes may be able to be achieved through short, focused “micro-interventions.” This development may be able to be facilitated through multiple contexts, including via a web-based setting (Luthans, Avey, & Patera, 2008). PsyCap scholars have called for future research that further measures the performance improvement that results from PsyCap interventions.

Positive Workplaces and the Manager's Role

Successful for-profit organizations are able to effectively manage their resources to maximize their return to shareholders. Over the years the quality movement and re-engineering have helped organizations fine-tune their operations and maximize their traditional sources of capital. Organizations turned their attention to human capital and social capital. More recently, organizations have elected to focus on the development of Positive Psychological Capital as another source of productivity and competitive advantage (Luthans & Youssef, 2004).

Based on the notion that positive workplaces are more productive, recent research has focused on how to best increase workplace productivity. A major research project

with data from more than 10 million employees and 10 million customers suggests that the manager may be the key point of influence:

“Among the many variables that discriminate between highly productive workplaces and those that are unproductive is the quality of the local workplace manager and his or her ability to meet a core set of employees’ emotional requirements. Work units that meet these conditions of engagement perform at a much higher level than work units that fail to meet them” (Fleming & Asplund, 2007, p. 161).

Employee engagement involves employees’ cognitive and emotional connection to their work and to their workplace. Highly related to a variety of work and organizational outcomes across a variety of contexts (Harter, Schmidt, Killham, & Agrawal, 2009), employee engagement is heavily influenced by daily interactions with managers and coworkers at the workgroup level (Harter, 2009).

Manager positive emotions have been shown to predict group performance (George, 1995). Other research (Fredrickson, 2000) suggests that managers should cultivate positive emotions in themselves and among those they manage. Is it possible that employees “catch” the positive emotions of their managers? Research on emotional contagion (Hatfield, Cacioppo, & Rapson, 1993) suggests that this might be the case, noting that people automatically and continuously mimic the emotions of others. Further, even mild emotional expressions can influence cognition and behavior (Doherty, 1998). It stands to reason that a manager’s expression of positive emotions, as well as the outcomes associated with positive emotions, may “trickle down” to employees as well. The present study sets out to further explore this hypothesis.

Theoretical Model and Research Questions

Theoretical Model

The theoretical model for this study is shown in Figure 1. It is hypothesized that manager PsyCap training will lead to increases in manager PsyCap and performance, relative to a control group of managers who do not participate in the training. Drawing on previous contagion effect research, manager PsyCap training is also expected to relate positively to the performance, engagement, and PsyCap of followers.

----- INSERT FIGURE 1 HERE -----

Research Questions

The primary research questions to be explored in this study are as follows:

- Does manager PsyCap increase in response to a robust manager PsyCap training program, over and above that of a control group of managers?
- Will the manager's performance increase following their participation in the PsyCap training program, over and above that of a control group of managers?
- Is there a contagion or trickle-down effect for PsyCap training? Said another way, does PsyCap training for managers lead to increased PsyCap for the employees that they manage? Does this trickle-down effect also relate to the engagement and performance of the employees?

Significance of the Study

This current study sets out to add to existing theory and research on organizational behavior in several ways. The study draws on existing research related to the component parts of PsyCap, including self-efficacy, hope, optimism, and resilience. Following a thorough exploration of the developmental nature of each component part, as

well as the PsyCap construct overall, this study sets out to build on the PsyCap micro-intervention model put forth by Luthans and colleagues (Luthans, Avey, et al., 2006). The developmental model integrates the architecture of sustainable happiness model (Lyubomirsky, Sheldon, et al., 2005) with a particular focus on the intervention zone of intentional activity that can impact one's level of happiness through behaviors, cognitions, and volitions. The developmental model was then tested in a field setting using an experimental design with random assignment of subjects to treatment, as well as a control group. The study sets out to answer the call for future research on whether PsyCap can be developed as well as to determine its impact on performance (Luthans et al., in press).

While the majority of research on management development centers on the manager as the target and even as the end product of training programs, this study emphasizes the role of the manager in driving the performance of the teams that they lead. Drawing on related research exploring the contagion effect of mood and emotion (George, 1995), the current study explores the extent to which managers are able to pass on learning related to PsyCap to their teams through changes in managerial behavior during the time of the field study. It is hypothesized that the positivity training not only increases the manager's own reported levels of positivity and productivity, but that their employees will notice a difference in their managers to the extent that the positivity, employee engagement, and productivity of the employees will also be enhanced. As such, the targeted outcomes of the present program include the PsyCap, employee engagement, and performance gains of the employees that are managed by the participants in the training program.

Employee engagement has enjoyed substantial theory development and research over the past several years (Harter, 2009), with more than 10 million employees having participated in one well-known assessment of employee engagement over the past several years (Harter et al., 2009). The present study extends emerging work (Avey, Wernsing, & Luthans, 2008) that addresses the relationship between employee engagement and PsyCap.

Structure of the Dissertation

The second chapter of this dissertation addresses literature related to the research questions outlined above. Theoretical and background research on each variable in the study is reviewed. Additionally, chapter two reviews previously conducted empirical studies, with a special emphasis on interventions that inform the design of the training program designed for this study. Chapter three addresses the study design and methodology. A description of the field site and study participants is provided. Chapter three concludes with an overview of the intervention, including the pre- and post-test surveys and the classroom-based training program. Chapter four reviews the data analysis and results of the study, as well as the results of each of research questions and associated hypotheses. Chapter five provides a discussion of the strengths and limitations of the study. The dissertation concludes with practical implications of the findings as well as areas for further research.

CHAPTER TWO: REVIEW OF LITERATURE

In order to better understand the concepts addressed in this study, the following literature review provides an overview and synthesis of the relevant areas of research. Special attention is focused on the contribution that each of the areas offers to the development program designed for use in this study. Definitions are provided, as well as a discussion of how each concept ties to other areas of related research and to the current study. Hypotheses for the current study are included throughout the chapter.

The review of literature begins with a summary of research in the field of positive psychology and application to the workplace through the work of scholars in Positive Organizational Scholarship and Positive Organizational Behavior. The section on Positive Organizational Behavior (POB) includes a description of each of the POB states (self-efficacy, hope, optimism, and resilience) as well as how each of these states meets the POB criteria for inclusion. Next is an in-depth discussion of the theory, research, and application of PsyCap, which has roots in Positive Organizational Behavior. The literature review continues by addressing workplace engagement and positive emotions. The chapter concludes with a review of research on the contagion effect and its relevance to the current study.

Positive Psychology and Application to the Workplace

The mission of psychology in the early 20th century attended to both helping the mentally ill and tapping into the potential of talented and gifted individuals. Following World War II, increased attention and funding encouraged clinical psychologists to focus more on treating the mentally ill. While few would argue with the value in addressing issues of mental illness, the nearly exclusive focus on the negative was troubling to some

of the leading psychologists of the day. Abraham Maslow, a leader in the humanistic psychology movement, articulated this feeling when he stated, “It is as if [applied] psychology had voluntarily restricted itself to only half its rightful jurisdiction, and that the darker, meaner half” (Maslow, 1954, p. 354). In fact, the final chapter of Maslow’s influential book, *Motivation and Personality*, was entitled “Toward a Positive Psychology.” Although there was a meaningful initial response to Maslow’s call, in time other agendas took over the field of humanistic psychology and attempts to turn psychology to a more positive agenda remained unrealized (Keyes & Haidt, 2003).

Several decades later, American Psychological Association President Martin Seligman (1999) attempted to renew attention of psychologists on the study of what is right about people. Alongside several other established leaders across the field of psychology including Ed Diener (2000), Chris Peterson (2000), Rick Snyder (2000), Don Clifton (2000), George Valliant (2000), and Mihalyi Csikszentmihalyi (Seligman & Csikszentmihalyi, 2000), Seligman offered a new agenda for psychology in the new millennium. Positive psychologists began to unite around a purpose of changing psychology’s focus from only repairing the worst things in life to also building positive qualities (Seligman & Csikszentmihalyi, 2000). The new movement in psychology addressed the once-forgotten ‘average person’ and began to study what might be possible (Sheldon & King, 2001).

A review of psychological research from the first decade of the new millennium provides evidence that scholars agreed with Seligman’s observations. Several special journal issues (*American Psychologist*, January 2000, March 2001; *Journal of Humanistic Psychology*, Winter 2001), a handbook (Snyder & Lopez, 2002), and several conferences

provided avenues for the development and dissemination of these new streams of research.

Following the premise that “what is good about life is as genuine as what is bad and therefore deserves equal attention” (Peterson, 2006, p. 4), positivity research has also enjoyed an increased focus in the fields of management and leadership. Positive Organizational Scholarship, led primarily by a group of researchers at the University of Michigan’s Center for Positive Organizational Scholarship, focuses on dynamics in organizations that lead to “positive deviance” or the ways in which organizations and their members flourish and prosper in extraordinary ways (Cameron & Caza, 2004; Cameron, Dutton, & Quinn, 2003). This research stream encompasses concepts including virtues, positive organizing, and meaning-making in the workplace.

Positive Organizational Scholarship is defined as “the study of that which is positive, flourishing, and life-giving in organizations. Positive refers to the elevating processes and outcomes in organizations. Organizational refers to the interpersonal and structural dynamics activated in and through organizations, specifically taking into account the context in which positive phenomena occur. Scholarship refers to the scientific, theoretically derived, and rigorous investigation of that which is positive in organizational settings” (Cameron & Caza, 2004, p. 731).

Another group of scholars have focused on applying positive psychology to the workplace. This work, known as Positive Organizational Behavior (POB), centers its attention on the individual level of analysis and in particular on the development processes that can be leveraged for performance improvement. The following section further describes POB.

Positive Organizational Behavior

Encouraged by positive psychology's renewed focus on studying what is right about people, organizational behavior researchers applied positive psychological research to the workplace. Positive Organizational Behavior is defined as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (Luthans, 2002b, p. 59).

A broad range of positive workplace topics have been addressed in the literature. POB researchers are interested in a more specific subset of these workplace positivity constructs. In the introduction of POB to the literature, scholars established working boundaries and criteria for inclusion in the list of positive psychological resource capacities. Among these standards for inclusion are having a solid theory and research base, having valid and reliable measures, existing at the individual or micro level, exhibiting state-like and developmental characteristics that can be enhanced through brief interventions, and having illustrated an ability to impact work-related performance (Luthans, 2002a, 2002b; Luthans & Youssef, 2007; Wright, 2003; Youssef & Luthans, 2007, 2009). While concepts including subjective well-being and emotional intelligence have been proposed as potential POB concepts in the past (Luthans, 2002b), the four receiving the majority of attention by POB researchers are self-efficacy, hope, optimism, and resilience. These four capacities are described in further detail in the following sections.

Self-efficacy

Interest in beliefs about personal control has a long history in psychology. This study of perceived competence was first defined and articulated under the heading “self-efficacy” by Albert Bandura in an influential *Psychological Review* article (Bandura, 1977a). More recent conceptualizations of the concept include references to “judgments of how well one can execute courses of action to deal with prospective situations” (Bandura, 1982, p. 122) and “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Self-efficacy beliefs are not beliefs about an individual’s level or type of skill set, but rather what they can accomplish by utilizing the skills that they do have (Bandura, 1986). They are not concerned with what an individual intends to do, but rather with beliefs about what one has the capacity or ability to do (Maddux, 2009). Related to POB research, a widely accepted definition of self-efficacy references “an individual’s convictions (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context” (Stajkovic & Luthans, 1998b, p. 66).

Initially introduced as the “best fit POB capacity” (Luthans, 2002a), self-efficacy meets the POB criteria for inclusion with a solid theory and strong research base. With roots in Social Learning Theory (Bandura, 1977b), self-efficacy also comes in part from one’s capacity for symbolic thought and ability to respond to the environment (Maddux, 2002), as described extensively in Social Cognitive Theory (Bandura, 1986). Together, these theories underpinning self-efficacy have been among the most influential

psychological contributions of the past 40 years, yielding the strong theory backup necessary for POB capacities.

In addition to a solid theory and research base, self-efficacy has been shown to have valid and reliable measurement. Measurement of self-efficacy can include any of the three dimensions of self-efficacy, including magnitude, strength, and generality (Bandura, 1977a, 1986). However, since state-like self-efficacy exists within specific domains, measures should also be domain specific, with less emphasis on generality (Maddux, 2009).

The typical format for measuring self-efficacy magnitude and strength (Wood & Locke, 1987) requires participants to answer two-part questions. In this format, yes or no answers are needed to assess magnitude (e.g., performing a certain task at a certain level). Then, to assess the strength dimension, the participant is asked to give their percentage of confidence in that answer. Later research (Lee & Bobko, 1994) found that the best composite score is arrived at by combining the percentage estimates for the strength dimension for all answers where the magnitude response was yes.

While these measures were found to have acceptable psychometric properties, later research (Maurer & Pierce, 1998) found that more user-friendly Likert-type measurement formats could serve as acceptable alternatives as well. Among the many self-efficacy measures related to the workplace are those of career self-efficacy (as reviewed by O'Brien, 2003) and role breadth self-efficacy (Parker, 1998). Parker's measure, designed to capture employees' "perceived capability of carrying out a broader and more proactive set of work tasks that extend beyond prescribed technical requirements" (Parker, 1998, p. 835), is drawn from for use in the present study.

In order to be included as a POB capacity, a relationship to work-related performance must be established. Self-efficacy beliefs have been noted as a contributing factor for individuals who take higher levels of initiative, exert more effort and motivation to accomplish tasks, and more readily persist in the face of failure or significant obstacles (Bandura, 1986, 1997; Luthans, 2002a). Many studies have illustrated the theoretical and empirical relationships between self-efficacy and work-related performance in a variety of areas including leadership development (Chemers, Watson, & May, 2000), goal choice and task performance (Locke, Fredrick, Lee, & Bobko, 1984), decision making (Lam, Chen, & Schaubroeck, 2002), work attitudes across cultures (Luthans, Zhu, & Avolio, 2006), creativity (Tierney & Farmer, 2002), entrepreneurship (Boyd & Vozikis, 1994; Luthans & Ibrayeva, 2006), and academic success (Bandura, 1993). Additionally, more than ten meta-analyses (see Bandura & Locke, 2003 for a review) illustrate the relationship between self-efficacy and human functioning, with at least three meta-analyses reporting specifically on the strong relationship between self-efficacy and work-related performance (Judge, Jackson, Shaw, Scott, & Rich, 2007; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998a).

Self-efficacy has a rigorous and tested developmental framework. Self-efficacy beliefs are built from four primary information sources (Bandura, 1982, 2007; Gist, 1987). The strongest source of information for developing self-efficacy beliefs is often referred to as enactive mastery experiences or performance attainments (Bandura, 1977a, 1982; Bandura, Adams, & Beyer, 1977). However, it is not just achieving success that leads to increased self-efficacy, but the processing and interpretation of that success (Bandura, 2007; Stajkovic & Luthans, 1998b). The second source of information that can

aid in the development of self-efficacy beliefs is known as vicarious experience or modeling. Observing others achieve success can be helpful, especially if one can relate to and identify with the model (Bandura, 1977a; Luthans 2002a). Verbal persuasion is the third source of information that can aid in developing self-efficacy beliefs. This positive feedback and support from others can help to convince a person that he or she can achieve success at a particular task (Gist, 1987). The fourth source of information useful in developing self-efficacy beliefs is referred to as psychological and emotional arousal. Simply put, if an individual can reduce their anxiety about a situation, they may be more likely to see themselves as capable, strong, and less likely to fail (Bandura, 2007). These four sources of information – enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal – have been studied extensively as potential places from which self-efficacy beliefs can be drawn. However, the sources are just “raw data” and must be cognitively processed and reflected upon before change is likely to take place (Bandura, 2007).

Several field studies have leveraged the power of self-efficacy and its facilitating cognitive processes to impact work-related performance. These studies have been conducted across a variety of contexts and often include relatively brief interventions. As called for by Gist and Mitchell (1992), a variety of self-efficacy training techniques have been studied, with most interventions approaching the development process by tapping into the sources of information (enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal) described earlier in this chapter. The information source with the highest predictive power, enactive mastery experiences, has

also received the majority of attention in the development of self-efficacy training programs.

A thorough review and meta-analysis of managerial training effectiveness noted that behavioral modeling, a facet of many self-efficacy training programs, may be more effective than traditional lecture format of training (Burke & Day, 1986). In support of this finding, Gist (1989) found that managerial training with cognitive modeling, practice, and reinforcement generated significantly higher self-efficacy and work-related idea generation than lecture and practice alone. Self-management training programs (Frayne & Latham, 1987; Latham & Frayne, 1989) that draw from social learning theory (Bandura, 1977a; 1986) provide evidence that perceived self-efficacy predicts job attendance. A variety of methods, often leveraging technology, have been utilized in the delivery of recent self-efficacy programs (Bandura, 2007; Gist, Schwoerer, & Rosen, 1989). In a robust intervention leveraging many of the principles identified by previous self-efficacy scholars, McNatt and Judge (2008) found that a self-efficacy intervention made up of an interview and subsequent written communications from organizational leaders both raised job attitudes and decreased turnover over a five-month period of time. The contributions of these researchers are particularly beneficial in the development of the intervention discussed further in chapter three.

Hope

A recent Google search on the term “hope” resulted in about 510,000,000 entries, more than double the total of the other major POB capacities combined (confidence and self-efficacy at 157,000,000; optimism at 15,100,000; resilience and resiliency at 12,000,000). While hope is clearly a popular term in the English language with a variety

of different meanings, hope as a positive psychological capacity carries a more precise meaning and enjoys a rigorous research history.

Much of the academic research on hope over the last 20 years has been associated with C.R. “Rick” Snyder, one of the pioneers of the Positive Psychology movement, who introduced his cognitive theory of hope (Snyder, 1989). Conceptualized as expectations or feelings about goals and the future (Edwards, 2009), hope is defined as “a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)” (Snyder, Irving, & Anderson, 1991, p. 287).

Hope theory actually finds its origins in excuse-making research (Rand & Cheavens, 2009). As Snyder and his colleagues studied excuse theory (Mehlman & Snyder, 1985), they began to theorize about the other end of the spectrum, leading them to focus attention on goal visualization and hope. Hope is described as a motivational state that is based on three primary components: goals, pathways, and agency goal-directed thinking (Snyder, 1994). Said another way, people with high levels of hope have the “will” (agency) and the “ways” (pathways) to achieve goals (Snyder, Harris, et al., 1991).

Foundational to hope theory is the assumption that humans are goal-directed in their behavior. Goals can be either “approach goals,” such as getting a promotion, or “avoidance goals,” such as not losing a customer (Snyder, 2002). Goals can be short-term or long-term, and although some suggest that behavior may be driven by nonconscious goals (Chartrand & Cheng, 2002), most believe that goals need to be of some degree of

uncertainty (Snyder, 2002). It may be that hope is strongest when the likelihood of attaining a goal is intermediate, with some risk involved (Averill, Catlin, & Chon, 1990).

Pathways thinking involves the future potential for goal achievement. Those high in pathways thinking are characterized by their ability to generate one or more specific possible routes to reaching a goal. Individuals reporting high levels of hope have been shown to be very successful at coming up with many different routes to achieving their goals (Irving, Snyder, & Crowson, 1998; Snyder, Harris, et al., 1991).

The third capacity within hope theory, agency thinking, involves motivation that causes individuals to initiate and sustain movement along pathways toward achieving goals. Agency thinking may involve positive self-talk and other types of support that help individuals initiate and sustain goal pursuits. High levels of agency are especially beneficial in overcoming instances where one experiences difficulty in reaching their objectives. In these instances, people with high hope are able to move on to other pathways towards goal achievement (Snyder, 1994). Agency and pathways thinking work together, and may reciprocally feed off one another in the process of goal pursuit (Snyder, Harris, et al., 1991).

Several valid and reliable measures of hope have been developed (see Lopez, Snyder, & Teramoto-Pedrotti, 2003, for a review). Among the most widely used measures of hope among adults are the “Goals Scale” to measure the dispositional or individual differences attribute of hope (Snyder, Harris, et al., 1991) and the State Hope Scale to measure ongoing, goal-directed thinking (Snyder et al., 1996). The current study utilizes the State Hope Scale, as described later in this paper.

Hope research has been linked theoretically and empirically to a variety of positive outcomes across a wide range of contexts. Related to the workplace, hope has been associated with profitability (Adams et al., 2002; Peterson & Luthans, 2003), satisfaction and retention (Peterson & Luthans, 2003), job performance (Peterson & Byron, 2007), management (Snyder, 1995), leadership and supervisor-rated performance and salary (Luthans et al., 2005), and performance, job satisfaction, work happiness, and organizational commitment (Youssef & Luthans, 2007).

In the past several years a growing number of clinical and consulting psychologists have focused on hope therapy as a means to help individuals overcome life's challenges. Psychologists Shane Lopez, Rick Snyder, and colleagues propose four primary strategies (hope finding, bonding, enhancing, and reminding) for accentuating hope (Lopez et al., 2004). First, hope finding leverages the power of formal assessment as well as informal and qualitative approaches in an effort to increase client expectations for assistance in increasing their level of hope in the process of goal pursuit. Next, hope bonding involves developing a successful therapeutic working alliance (Bordin, 1994) between the therapist and the client. Third, hope enhancing involves strategies that encourage clients to clarify goals-directed thinking, produce multiple pathways, and summon the necessary agency to persevere in their pursuit of goals, even in the face of challenge or setbacks. Finally, hope reminding sets out to internalize hopeful thinking into the daily thoughts and actions of the client.

More specifically related to POB research, Luthans (2002a) offers several practical guidelines for developing and managing hope in the workplace. Related to the goals component of hope theory, practitioners are encouraged to ensure goal acceptance

and commitment, to determine specific stretch goals, and to break difficult goals into several smaller, more attainable steps. Developing several specific action plans to achieve goals is recommended. Luthans suggests that interventions designed to increase hope should encourage the avoidance of false hope. Mentally rehearsing important events in the future can also aid the hope development process. Based on this strong theory and preliminary evidence, it seems that the future holds much potential for further work on development programs leveraging the power of hope to drive workplace performance.

Optimism

Thinking about the future can be energizing for some, while others struggle with the prospects of the unknown. Research on optimism, the third POB capacity reviewed here, helps to explain this phenomenon. Simply put, optimists are “people who expect good things to happen to them; pessimists are people who expect bad things to happen to them” (Scheier & Carver, 2009). This difference in expectancies causes optimists and pessimists to differ in how they approach problems and in the manner as well as the success rate with which they deal with adversity.

Although this chapter focuses primarily on the expectancy-value theory of optimism (Scheier & Carver, 1985), a parallel theory of optimism has also received a considerable amount of attention (C. Peterson, 2000; Peterson & Seligman, 1984; Peterson & Steen, 2009; Seligman, 1998). This other type of optimism deals with explanatory style, or how people explain the causes of events that happen to them. It is an attributional style that views positive events as personal, permanent, and pervasive, and negative events as external, temporary, and situation-specific (Seligman, 1998). There are valid measures for this explanatory style form of optimism (see Reivich & Gillham,

2003, for a review). Although there are a few theoretical distinctions between explanatory style and expectancy-value theories (see Peterson & Chang, 2003, for a review), both share the premise that people's actions and experiences are driven by expectations for the future (Carver, Scheier, Miller, & Fulford, 2009).

The strong theory and research backup for optimism dates back to the early 20th century expectancy-value theories of motivation (Scheier & Carver, 2009). Similar to other positive psychological capacities, expectancy-value theorists assume that individuals are in active pursuit of goals (Carver, Scheier, Miller, & Fulford, 2009).

The "value" component of expectancy-value theories reflects the importance of the goal to the person (Carver & Scheier, 1998). The other dimension, "expectancy," reflects the level of confidence in goal attainment. Having low confidence about goal attainment will likely cause action to stop; higher confidence likely leads to an increased perseverance in the face of challenges. Expectancies comprise the most important component in the discussion of optimism (Scheier & Carver, 2009).

Several valid measures of the expectancy-value perspective of optimism exist (see Carver & Scheier, 2003, for a review). Expectancies can be measured simply by asking people whether they believe their outcomes will be good or bad (Scheier & Carver, 1992). Generalized expectancies are often measured with the Life Orientation Test (Scheier & Carver, 1985), which was later updated, modified, and re-released as the Revised Life Orientation Test (LOT-R, Scheier, Carver, & Bridges, 1994). Further attention to the instrument by Shifren & Hooker (1995) helped to more intentionally reflect the state-like nature of optimism. Items from the LOT and LOT-R contribute to the instrumentation used in this study, found in Appendix A.

Much of the research on optimism has addressed health-related topics including adjustment to chronic disease (Rasmussen, Wrosch, Scheier, & Carver, 2006), childbirth (Carver & Gaines, 1987), heart surgery (Fitzgerald, Tennen, Affleck, & Pransky, 1993), cancer (Carver, Lehman, & Antoni, 2003), and AIDS (Taylor et al., 1992). These studies consistently find that optimistic persons experience less distress during times of adversity and are generally healthier than pessimists (Scheier & Carver, 2009).

Optimism has been linked to a variety of workplace outcomes, including performance, job satisfaction, work happiness, and organizational commitment (Luthans et al., 2005; Youssef & Luthans, 2007). Optimistic explanatory style has also been linked to higher productivity and lower turnover in insurance sales agents (Seligman & Schulman, 1986).

Although optimism may have a dispositional baseline (Scheier & Carver, 1987) with as much as 25-30% of the variability in optimism due to genetic factors (Scheier & Carver, 2009), it seems likely that change is possible. Through cognitive-behavior therapies focused on fostering positive thoughts, pessimists have been able to become more optimistic (Carver et al., 2009). Prior experience with success and failure may play a role in nurturing increased levels of optimism, as previous experiences with success may raise anticipations of future success. Additionally, adaptive coping skills and positive modeling may help individuals increase their level of optimism expectancies over time (Scheier & Carver, 2009). Recent POB research (Luthans, Avey, et al., 2006; Luthans et al., in press) is answering the call for further attention to environmental factors that enhance optimism.

Resilience

Dubbed as “The Decade from Hell” by *Time* magazine (Serwer & Kowitt, 2009), the first years of the millennium will be remembered for their many challenges. The top story of 2009, according to The Associated Press’ annual poll of U.S. editors and news directors, was the economy and its unemployment of more than 10%, tripling federal deficit of more than \$1.4 trillion, and turbulent stock market. An uncertain future for healthcare, a failing auto industry, fears over the H1N1 “swine flu,” the troop surge in Afghanistan, the Fort Hood rampage, and the deaths of Michael Jackson and Senator Ted Kennedy were also among the top 10 stories of the year. Although the inauguration of President Barack Obama (#2 news story of 2009) was generally a positive event, the challenge of fighting two wars around the world and dealing with arguably the worst economy since the Great Depression weighed heavily on the president’s first year in office, causing approval ratings to hover around 50% near the end of the year. It is clear that America finds itself in difficult times with many important challenges to address.

Although most of 2009s biggest headlines were negative, coming in at number 10 on the list of top stories of the year was “The Miracle on the Hudson.” On January 15, 2009, just six minutes after departing from New York’s LaGuardia Airport, US Airways Flight 1549 struck a flock of Canada Geese and immediately lost almost all power in both engines. Flying over midtown Manhattan, without a safe place to land, tragedy seemed imminent. Then, in a moment that would forever change the lives of the 155 occupants on board, pilot Chesley Sullenberger turned the plane southbound and glided towards an emergency ditching in the Hudson River. Thanks to the quick action of the flight crew

and numerous first responders, the event that at first looked like a sure tragedy ended with only a few serious injuries and amazingly no fatalities.

How is it that some people are able to successfully deal with such dramatic events, and also deal with life's everyday challenges such as job loss, impending deadlines, or financial stress? The answer may be found in the POB capacity of resilience. Resilience is defined as "the capability of individuals to cope successfully in the face of change, adversity, and risk" (Stewart, Reid, & Mangham, 1997, p. 22). More specifically defined for POB researchers, Luthans offered that resilience is "the capacity to rebound or bounce back from adversity, conflict, failure, or even positive events, progress, and increased responsibility" (Luthans, 2002a, p. 702).

The scientific exploration of resilience goes back to the 1960s and 1970s and studies of children with significant contextual challenges, including mentally ill parents (Rutter, 1985, 1987; Rutter, Maughan, Mortimore, & Ouston, 1979), or those living in poverty or negative family environments (Garmezy, 1991, 1993; Garmezy, Masten, & Tellegen, 1984; Werner, 1993, 1995). Of particular interest to the researchers at the time was the finding that, although they seemed to have the odds stacked against them, many of the children were able to respond positively to stress or adversity, overcome the challenging situations, and go on to live reasonably normal lives (Masten & Garmezy, 1985; Rutter, 1985).

Although we are easily intrigued by the headlines that come with rare and extraordinary examples of resilience, the scientific study of resilience typically explores more "ordinary magic" (Masten, 2001), and "relatively ordinary adaptive processes that promote competence, restore efficacy, and encourage growth" (Sutcliffe & Vogus, 2003,

p. 95). Further, resilience can vary from one situation to another based on the specific circumstances presented (Staudinger, Marsiske, & Baltes, 1993). Because of this, resilience seems to be an important factor in everyday organizational life.

A variety of valid and reliable measures of resilience have been developed. Several measure the intelligence-related personality traits of ego-control and ego-resiliency (Block & Block, 1980; Block & Kremen, 1996; Klohnen, 1996). Another measure, the Resilience Scale (Wagnild & Young, 1993), is derived from interviews with resilient individuals. The Resilience Scale has received strong reliability and validity support over the years, and is used in the research project presented here.

As noted earlier in this chapter, the early research on resilience focused on examples of children who were able to overcome difficult situations and lead reasonably normal lives. More recently, a growing number of scholars have studied resilience and its relation to workplace performance (Coutu, 2002; Doe, 1994; Harland, Harrison, Jones, & Reiter-Palmon, 2005; Horne & Orr, 1998; Luthans et al., 2005; Luthans, Vogelgesang, & Lester, 2006; Mallak, 1998; Waite & Richardson, 2004; Youssef & Luthans, 2007; Zunz, 1998). These scholars have constructed resilience theory and empirically tested it at the individual, group, and organizational levels of analysis. Their work has laid the groundwork for future interventions focused on developing resilient individuals and organizations.

The groundbreaking research studies in child psychology also provided support for the notion that resilience is not entirely determined by genetics or the environment, and that it can be characterized as a process in individual development across the lifespan (Masten, 1994). Development of resilience can happen naturally over time through an

individual's ongoing management of the challenges, risks, and stresses of everyday life, and allows individuals and organizations to bounce back from adversity with additional resources and strength (Sutcliffe & Vogus, 2003).

The development of resilience in individuals and organizations involves several facets. First, similar to other POB capacities, is the need to set positive goals. Next comes measuring assets (e.g., resources such as a positive workplace or adequate knowledge and skill) and protective factors (e.g., organizational policies that help to prevent failure) as well as risks (e.g., economic factors, stiff competition). Resilience development includes strategies to reduce exposure to risk while mobilizing assets and protective systems (Cutuli & Masten, 2009; Masten, 2001; Masten, Cutuli, Herbers, & Reed, 2009; Masten & Reed, 2002; Yates & Masten, 2004).

Much of the historical work with resilience has focused on understanding the construct, describing the phenomenon, and refining measures and correlates of resilience. As recently as 2003, scholars noted that little of the work in the field of resilience had focused on intervention (Ryff & Singer, 2003). However, the scientific study and developmental nature of resilience has recently captured the attention of the American Psychological Association (APA). As noted in an APA campaign encouraging further study of resilience, "resilience can be learned. It is a journey, not a single event or point in time" (Martin, 2002, p. 52). Further, Murray offered that resilience is "a set of learned behaviors that takes strategizing to build" and "requires time, effort, and personal improvement through small steps" (Murray, 2003, p. 42). Given that resilience may act in concert with other positive psychological capacities, such as optimism and hope, to allow

individuals to thrive in the face of challenge (Tennen & Affleck, 1998), it seems that resilience will continue to serve as a contributing POB capacity into the future.

Psychological Capital (PsyCap)

Each of the four positive psychological capacities described above have been theorized as independent concepts (Bandura, 1997; Luthans & Jensen, 2002; Luthans, Youssef, & Avolio, 2007a; Snyder, 2000, 2002). Theoretical differences exist in relationship to the treatment given to outcome value, goal-related thinking, perceived capacities for agency-related thinking, and perceived capacities for pathways-related thinking (Snyder, Rand, & Sigmon, 2002). Further empirical and statistical evidence supports the notion that the four capacities each make a unique contribution in explaining human behavior (Bryant & Cvengros, 2004; Carifio & Rhodes, 2002; Chemers et al., 2000; Magaletta & Oliver, 1999; Scioli et al., 1997; Youssef & Luthans, 2007).

At the same time, researchers considered the notion that the positive psychological states may have even more predictive power as a higher-order core factor (Luthans, Avolio, et al., 2007; Stajkovic, 2006). This factor is known as Psychological Capital, or simply PsyCap, and is defined as:

“an individual’s positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems with adversity,

sustaining and bouncing back and even beyond (resiliency) to attain success (Luthans, Youssef, & Avolio, 2007a, p. 3).

PsyCap has a strong theoretical base, drawing from the rich research that supports the four positive constructs described earlier in this chapter. The term Psychological Capital was introduced in the scholarly literature by Luthans and Youssef (2004) as a way to invest in people for competitive advantage. Several conceptual papers and books have been put forth to further describe PsyCap and its component parts (Luthans, Avolio, et al., 2007; Luthans, Vogelgesang, et al., 2006; Luthans, Youssef, & Avolio, 2007a, 2007b; Youssef & Luthans, 2010).

As with each of the positive psychological capacities underpinning the POB framework, PsyCap is able to be measured in a statistically sound manner. Drawing on the scales described earlier in this chapter (self-efficacy: Parker, 1998; hope: Snyder et al., 1996; optimism: Scheier & Carver, 1985; resilience: Wagnild & Young, 1993), Luthans and colleagues (Luthans, Avolio, et al., 2007) developed a 24-item questionnaire to measure PsyCap. They went on to examine the discriminant, convergent, and criterion validity, as well as test-retest reliability. The 24-item measure allows researchers to evaluate PsyCap as a whole, and also to study the four subscales corresponding with the four underlying positive psychological capacities. Leveraging a rigorous analytic technique (Stanton, Sinar, Balzer, & Smith, 2002), researchers developed and utilized a shorter 12-item version of the PsyCap Questionnaire (Avey, Luthans, & Mhatre, 2008; Luthans, Avey, Clapp-Smith, & Li, 2008; Norman, Avolio, & Luthans, in press). The shorter version may not allow for as complete of measurement of the four component parts or subscales, but has been found to accurately measure the core PsyCap variable.

The shorter version of the assessment much more readily accommodates the common constraint of survey length imposed in field research.

An impressive amount of empirical research has been conducted in the first few years following the conceptualization and development of valid measures of PsyCap. Several studies have also tested the hypothesis that PsyCap will have a greater relationship with workplace outcomes than any of its four component parts. PsyCap has been linked to several workplace outcomes including performance and satisfaction, (Luthans, Avolio, et al., 2007), job satisfaction and organizational commitment, (Larson & Luthans, 2006), decreases in stress and turnover, (Avey, Luthans, & Jensen, 2009), reduced absenteeism (Avey, Patera, & West, 2006), and performance and organizational citizenship behaviors (Gooty, Gavin, Johnson, Frazier, & Snow, 2009). Studies have been conducted across a variety of contexts with preliminary evidence showing that PsyCap relates with perceived trust in a downsizing scenario (Norman et al., in press) and links to workplace performance with Chinese factory workers (Luthans, Avey, Clapp-Smith, et al., 2008; Luthans et al., 2005).

Building off these studies, PsyCap researchers have begun to study more advanced issues including a group-level study indicating that trust in management mediates the PsyCap-performance relationship (Clapp-Smith, Vogelgesang, & Avey, 2009), PsyCap as a mediator in the supportive organizational climate to employee performance relationship (Luthans, Norman, Avolio, & Avey, 2008), and the relationships of PsyCap and emotions with multiple employee attitudes and behaviors (Avey, Wernsing, et al., 2008). Ongoing research continues to examine the role of PsyCap in explaining workplace behaviors.

PsyCap is a state-like dimension that is open to development (Luthans, Youssef, & Avolio, 2007a). Luthans and colleagues (Luthans, Avey, et al., 2006) issued a call for more PsyCap interventions and provided a model and initial evidence that PsyCap can be developed through highly focused, very short “micro-intervention” training sessions. Micro-interventions are very common in the leadership development literature. An extensive review and meta-analysis by Reichard & Avolio (2005) found that nearly two-thirds of all leadership development interventions were conducted in six hours or less. A recent field study suggests that training may not only increase a participant’s reported level of PsyCap, but also impact their work performance (Luthans et al., in press). Another field study found a relationship between leader and follower PsyCap and performance (Avey, Avolio, & Luthans, in press). PsyCap interventions have been conducted online with evidence suggesting that interventions as short as two hours can increase the reported level of PsyCap (Luthans, Avey, & Patera, 2008). These examples provide evidence of the potential for increasing positivity through PsyCap training.

Hypothesis 1a: Manager PsyCap will increase for managers who participate in the PsyCap micro-intervention.

Hypothesis 1b: Performance will increase for managers who participate in the PsyCap micro-intervention.

Employee Engagement

The growth and sustainability of an organization is largely determined by the quality of its human resources. Organizations make significant investments in recruiting applicants with the right educational credentials, work experience, and talent. From these applicant pools, important attention is regularly given to selecting the right employees,

with many selection assessments showing strong validity in predicting subsequent work performance (Harter, Hayes, & Schmidt, 2004; Schmidt & Rader, 1999). While these are important activities, it is not enough just to hire the right people – the employees need a great place to work. Given the notion that employees don't necessarily quit their jobs because of the company, but rather because of their direct manager (Buckingham & Coffman, 1999), it is imperative that organizations focus energy on developing managers who will build strong local workgroup cultures and set their employees up for success.

Great workplaces are often characterized by the level of employee engagement, defined by Harter (2009, p. 330) as “the involvement with and enthusiasm for work.” The theory of employee engagement was introduced to the management literature nearly twenty years ago 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). Other scholarly conceptualizations of engagement include viewing it as a “positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, Bakker, & Salanova, 2006, p. 702).

Employee engagement has enjoyed a high level of attention in the research literature since the release of Gallup's bestselling book, *First, Break all the Rules* (Buckingham & Coffman, 1999). Over the years the term has been commonly used by practitioners to mean anything from organizational commitment or other types of attitudinal measures (Harter, 2009). This chapter focuses on the research tied to the scholarly definitions of employee engagement noted above.

Job satisfaction, or how an individual feels about their job, has received considerable attention in the management literature (Judge, Thoresen, Bono, & Patton, 2001). Although job satisfaction is related to employee engagement (Harter, Schmidt, & Hayes, 2002), engagement is more concerned with specific elements of day-to-day experiences and discretionary efforts of employees (Wagner & Harter, 2006). The concept includes the physical and intellectual involvement as well as emotional enthusiasm for work (Fredrickson, 2000; Harter, 2009).

Several measures of employee engagement have been developed in the past few years. Two of the more widely-used measures are those developed by Gallup (Buckingham & Coffman, 1999) and European professor Wilmar Schaufeli and colleagues (Schaufeli et al., 2006). Both measures have been extensively tested for reliability and validity, and are available in multiple languages. The present study utilizes the Gallup measure, as noted in Appendix A.

One of the major contributions employee engagement makes to the management literature is its role in helping to explain business outcomes. At least ten meta-analyses have been conducted to analyze relationships with performance measures such as customer loyalty, profitability, productivity, turnover, safety incidents, absenteeism, shrinkage, patient safety incidents, and quality. Each of the 12 engagement statements on the Gallup measure have evidence of generalizable prediction of performance across many different work units, industries, and countries (Harter et al., 2009). Further work has explored the causal relationship between employee engagement and performance (Harter, Schmidt, Asplund, & Killham, 2005). Employee engagement has also been correlated with self-efficacy, one of the POB capacities described earlier in this chapter

(Luthans & Peterson, 2002). The elements of engagement not only link to decreases in employee turnover, but may even serve as a reason that applicants are drawn to organizations in the first place (Harter & Blacksmith, 2010).

Understanding the relationship between employee engagement and performance causes researchers to naturally consider strategies for increasing the level of employee engagement. How do you create a great place to work? While some organizations are recognized and awarded for the strength of their workplaces on an annual basis, research shows that employee engagement is influenced heavily by daily interactions with managers and coworkers at the local, workgroup level (Harter, 2009). Surprisingly, there may be almost as much range within companies as there is across companies. A recent study found that the standard deviation of employee engagement in the average company was nearly 75% of the level of standard deviation across all work groups in all companies in the entire Gallup database (Harter, 2000). In other words, while it is important for whole organizations to be supportive of employee engagement initiatives, it seems that the most meaningful effort takes place closer to the action. The local manager needs to own the responsibility for building a great place for each of their team members to work (Wagner & Harter, 2006).

Positive Emotions and the Contagion Effect

Positive emotions are “brief experiences that feel good in the present and increase the chances that one will feel good in the future” (Froh, 2009). Barb Fredrickson’s influential Broaden-and-Build theory of positive emotions (Fredrickson, 1998, 2001) describes how the short-term effects of positive emotions can produce long-term changes in individuals’ personal resources (Cohn & Fredrickson, 2009). Fredrickson (1998) noted

that positive emotions – such as joy, interest, contentment, and love – had been marginalized in previous models of emotions. The Broaden-and-Build theory suggests that positive emotions broaden or expand people’s range of thoughts and actions, which in turn build enduring personal and social resources, including the POB capacity of resilience (Tugade & Fredrickson, 2004, 2007).

Related to the study of positive emotions, well-being researchers have observed relationships between happiness and several desirable variables including satisfactory income (Diener & Biswas-Diener, 2002), marriage (Mastekaasa, 1994), energy and flow (Csikszentmihalyi & Wong, 1991), creativity (Isen, 2003), increased levels of physical health (Ryff & Singer, 1998), and even longer life (Danner, Snowdon, & Friesen, 2001). The happy/productive worker thesis (Cropanzano & Wright, 2001; Wright, Cropanzano, Denney, & Moline, 2002) has fascinated scholars for decades. The suggestion that organizations need to be characterized by positive, rather than negative emotion (Isen & Barron, 1991; Staw, Sutton, & Pelled, 1994) has been a catalyst for inquiry. A recent meta-analysis of the happiness-success relationship included more than 25 workplace studies and observed correlations to outcomes such as supervisor ratings, organizational citizenship behavior, turnover intentions, satisfaction with work, customer service, job autonomy, and job performance (Lyubomirsky, King, & Diener, 2005).

With these many desirable outcomes in mind, researchers turned their attention to better understanding how to foster growth in positive emotion. Lyubomirsky, Sheldon, & Schkade’s (2005) “architecture of sustainable happiness” model integrates literatures on state and trait factors comprising the well-being spectrum. The model suggests that

genetic set range, life circumstances, and intentional activity are the three areas that combine to determine one's chronic happiness level.

Well-being research, including studies with twins, indicates that nearly half of reported level of happiness is determined by a genetic set point or set range (Diener et al., 1999). While much of happiness appears to be determined at birth, it is believed that individuals can move within the upper and lower bounds of their happiness set range. However, focusing attention on attempts to move the set point is not likely to be as fruitful as other attempts at increasing happiness.

The second factor influencing the chronic happiness level pertains to life circumstances. Circumstances are relatively stable facts about a person's life, such as gender, age, and ethnicity. Other happiness-relevant circumstances may include the region in which one lives, or life status variables such as job status, income, health, marital status, or religion (Diener et al., 1999). Conventional wisdom assumes that a change in circumstances, such as getting a job, purchasing a time share on their favorite beach, marrying their high school sweetheart, or winning an award or even the lottery, will have a significant and lasting effect on their well-being. Contrary to popular belief, as little as 8-15% of variance in happiness levels is accounted for by all circumstantial factors combined (Argyle, 1999; Diener et al., 1999). While it seems likely that a positive change in circumstance will have an initial positive impact on one's happiness, the concept of hedonic adaptation (Fredrick & Lowenstein, 1999; Kahneman, 1999) suggests that humans readily adapt to change, whether the change is positive or negative. As a result, the excitement of a new car, home, or job, or the sadness that accompanies losing a

colleague or experiencing bodily injury, typically wears off over time as people return to their previously-established happiness level.

If approximately 50% of happiness is determined by genetics and 10% by relatively constant circumstances, then approximately 40% of the population variation is left to be accounted for by what Lyubomirsky and colleagues refer to as intentional activity. Seemingly less resistant to hedonic adaptation than circumstances (Sheldon & Lyubomirsky, 2006), intentional activity can be readily manipulated through concerted effort. Behaviors (e.g. regular exercise or intentionally recognizing co-workers), cognitions (e.g. thinking positively or reviewing successes), and volitions (e.g. accepting a leadership role on a non-profit board of directors or making a New Year's resolution) have been put forth as three types of intentional activity.

A meta-analysis of 51 interventions designed to enhance well-being and decrease levels of depression indicates that meaningful progress has taken place (Sin & Lyubomirsky, 2009). The composite results of the studies, conducted with 4,266 individuals, find that interventions can both significantly enhance well-being and decrease depressive symptoms. Possibly because people elect to pursue happiness in a variety of ways (Lyubomirsky, Sousa, & Dickerhoof, 2006; Tkach & Lyubomirsky, 2006), among the most successful approaches were those that involved multiple and different activities (e.g. Seligman, Steen, Park, & Peterson, 2005). Positive psychological interventions may consist of providing participants several possible activities from which to choose (Rath & Clifton, 2005), taking into account the consideration that not all activities will fit every person (Lyubomirsky, Sheldon, et al., 2005).

Manager positive emotions have been associated with group performance (George, 1995). Avey and colleagues found that leaders with high reported levels of PsyCap often led teams full of individuals with similarly high levels of PsyCap (Avey et al., in press). In another POB-related study, Norman and colleagues (Norman, Luthans, & Luthans, 2005) suggest that hopeful leaders may have a contagion effect on the resilience of employees and organizations that find themselves in the process of difficult change. Further extending theory on positive emotions to the workplace, Fredrickson (2000, 2003) suggests that managers should take steps to foster not only their own emotions, but the emotions of those that they manage.

So how do positive emotions spread in organizations? Research indicates that people naturally, automatically, and continuously mimic the emotions of others (Hatfield, Cacioppo, & Rapson, 1993). Emotions are powerful, given that even simple expressions of emotion influence thought patterns and behaviors (Doherty, 1998). This phenomenon, termed emotional contagion, is “a process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes” (Schoenewolf, 1990, p. 50).

Being in a good mood impacts how we interpret behavior, which drives our actions (Ashkanasy & Ashton-James, 2007). Ashkanasy (2003) suggests that emotions exist at a variety of levels in organizations, including between individuals and at the group level of analysis. Positive emotions seem to spread within groups with relative ease, and have been noted as an important factor in establishing group cohesion (Zurcher, 1982). George and colleagues (George, 1990; George & Brief, 1992) found that positive affect impacted group effectiveness and satisfaction. Similarly, positive emotional

contagion led to improved cooperation, decreased conflict, and increased perceived task performance (Barsade, 2002). Leaders who exhibit a positive mood may impact the mood of the groups they lead. This extends to other factors such as the amount of effort put forth by followers (Sy, Cote, & Saavedra, 2005). A recent study on charismatic leadership suggests that leader positive emotions can influence the mood of followers, and also drive increased ratings of leadership effectiveness and attraction to the leader (Bono & Ilies, 2006).

Given the growing body of literature on the contagion effect, it hypothesized that a manager's expression of positive emotions, as well as the outcomes associated with those positive emotions, may also be contagious and trickle down to their employees.

Hypothesis 2a: Follower PsyCap will increase for employees who directly report to managers participating in the manager PsyCap micro-intervention.

Hypothesis 2b: Employee engagement will increase for employees who directly report to managers participating in the manager PsyCap micro-intervention.

Hypothesis 2c: Performance will increase for employees who directly report to managers participating in the manager PsyCap micro-intervention.

CHAPTER THREE: STUDY DESIGN AND METHODOLOGY

Study Design

The present study involves a PsyCap training intervention with a field sample of managers, and utilizes a randomly assigned control group. All employees, including the treatment group of managers, control group of managers, and all direct reports of the managers in the treatment and control groups, were surveyed at the beginning and end of the study period. A random sample of managers participated in the PsyCap training intervention in the weeks following the pre-test. Although no associates (non-managers) participated directly in the PsyCap training program, the managers who participated in the program were encouraged to conduct several activities throughout the intervention period that would foster interaction with their associates in a potentially new and different way.

Recruitment and Sample

Participants for this study were working adults from a financial services firm in the Southeastern United States. Financial institutions were in the midst of historic difficulties in the time leading up to and during the study period. However, this particular organization was able to weather the difficulties very well and maintain a strong workplace in spite of the challenges taking place throughout its industry. The organization has 503 employees, including 110 with managerial responsibility and 393 associates (non-managers). The employees are located in either the corporate headquarters or in one of 18 branch locations in close proximity to the headquarters. Data from 501 employees in the organization were collected for this study (two of the employees were on leave during the study period). Sample sizes and response rates for

individual components of the study were as follows: pre-test including PsyCap, employee engagement, and self-rated performance (n = 408, 81.4%); pre-test of manager-rated performance (n = 453, 90.4%); post-test including PsyCap, employee engagement, and self-rated performance (n = 390, 77.8%); and post-test of manager-rated performance (n = 431, 86%).

Managers were randomly assigned to control or treatment groups. Based on the organizational reporting structure provided by the human resources department, associates were also assigned to either the control or treatment groups based on the assignment of their direct manager. The manager sample was comprised of 52 in the control group and 58 in the treatment group. The associate sample included 152 in the control group and 239 in the treatment group.

All employees were invited to participate in the research project via an email sent from the researcher to employees at their work email addresses provided by the organization's training department. The email included a brief introduction to the project and a description of the time commitment to participate. Although the research project was endorsed by the internal training department, it was made clear that participation was voluntary and conducted solely by an external researcher. The email included a link to a web survey which began with an informed consent statement describing the project, risks, and benefits. Participants who agreed to participate were then directed to the survey described later in this chapter.

Intervention

The study followed the research design model depicted in Figure 2, and was delivered on a schedule as follows:

- Week 1: All employees, including the managers in the treatment and control groups, were invited to complete a pre-test survey on Monday of the first week of the study. Participants were able to complete the survey any time during the week. Reminder emails were sent on Wednesday and Friday to participants who had not yet completed the pre-test survey. Managers also received invitations to a separate survey inviting them to rate the performance of each of the employees directly reporting to them.
- Week 2: In the week following the pre-test survey, the treatment group of managers participated in the 3.5-hour PsyCap training session described later in this chapter. Three sessions following the same agenda were delivered on consecutive days, allowing managers to participate in the session that best fit their schedule. Approximately 20 managers participated in each class.
- Weeks 3-6: Managers in the treatment group were sent emails on each of the four Mondays following the classroom session. These emails each described a brief activity that the managers were encouraged to complete during that week.
- Week 7: All employees were invited to complete a post-test survey. Participants were sent an email with a link to the survey on Monday, and were invited to complete the survey at any time during the week. As in the pre-test, reminder emails were sent on Wednesday and Friday to participants who had not yet completed the post-test survey. Again, managers also received invitations to a separate survey inviting them to rate the performance of each of the employees directly reporting to them.

----- INSERT FIGURE 2 HERE -----

Survey

The surveys were collected online through an external website. Items from three assessments previously validated in organizational behavior research were included in the surveys.

The first five items on the survey were designed to measure self-rated employee performance and are based on the work of Heilman, Block, & Lucas (1992). A sample item is, “How would you judge the overall quality of your work?” Next, the PsyCap Questionnaire or PCQ (Luthans, Avolio, et al., 2007; Luthans, Youssef & Avolio, 2007a) measures the four positive psychological capacities through a set of 24 items. Sample items: (a) efficacy: “I feel confident in representing my work area in meetings with management;” (b) hope: “Right now I see myself as being pretty successful at work;” (c) resilience: “I usually take stressful things at work in stride;” and (d) optimism: “I always look on the bright side of things regarding my job.” The final items on the survey come from the Gallup Q¹²® (Buckingham & Coffman, 1999; Harter et al., 2002), which begins with an item to assess overall workplace satisfaction, followed by 12 items to measure various elements of employee engagement (sample item: “There is someone at work who encourages my development”).

The survey was designed to utilize the funneling procedure, progressing logically from general to more specific groups of items (R. Peterson, 2000). Average time to complete surveys typically ranged from 5-10 minutes. The surveys could be conducted during the workday or at any other time when the employee was able to access the internet.

As is typically the case with research projects in the behavioral sciences, the present study presented several challenges that need to be minimized. One challenge was the threat of variance attributable to measurement method, known as common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Because many of the predictor and criterion measures in the present study were collected in a single setting through self-report, three notable procedural remedies were utilized to address the challenge.

First, scale format and scale anchors were varied throughout the survey. On the performance measure (Heilman et al., 1992), five items utilized a 1-9 scale with anchors specific to the question. The PsyCap Questionnaire (Luthans, Avolio, et al., 2007; Luthans, Youssef, & Avolio, 2007a) is made up of 24 items which were measured on a six-point agreement scale, strongly disagree to strongly agree. On the employee engagement questionnaire (Buckingham & Coffman, 1999; Harter et al., 2002), one item was assessed on a five-point satisfaction scale, extremely dissatisfied to extremely satisfied. The remaining 12 items on the assessment utilized a five-point strongly disagree to strongly agree scale, including a sixth (unscored) response item, “don’t know/does not apply.” As an additional factor controlling for common method variance, many of the scales utilize verbal labels for the midpoint of the scale, as recommended by Tourangeau, Rips, and Rasinski (2000). Finally, several of the items on the PsyCap questionnaire were reverse scored, providing another safeguard against variance attributable to measurement method.

To reduce evaluation apprehension, participants were informed that there were no right or wrong answers and were encouraged to answer questions as honestly as possible.

Although collecting unique identifiers was necessary to be able to assign subjects to the proper treatment/control group for the analysis and to calculate difference scores from the pre-test and post-test, participants were informed of various steps taken to protect their confidentiality. These steps included providing the assurance that individual-level responses would not be shared when linked with identifying information, and that aggregate-level data would be the primary output from the study.

Finally, data on manager-rated performance was collected. These items, also based on the work of Heilman and colleagues (1992) were collected during the pre-test and post-test field periods. Managers were asked to complete the five-item performance measure for each of the employees who they directly supervise or manage. The intention was to have manager ratings serve as the primary measure of performance. However, because of the risk of lower response rates from manager ratings, the self-rated performance measure listed above was also collected from each participant.

PsyCap Training Program

As mentioned in the intervention overview section earlier in this chapter, a manager positivity (PsyCap) micro-intervention was delivered to managers assigned to the treatment group. This training program was developed from previous research on PsyCap and its component parts of self-efficacy, hope, optimism, and resilience, as reviewed in chapter two of this paper (see also Luthans, Youssef & Avolio, 2007a, Chapter 8). The program also leveraged insights from the architecture of sustainable happiness model (Lyubomirsky, Sheldon, et al., 2005), particularly as it pertains to the intervention zone of intentional activity.

The intervention included a 3.5 hour classroom session during the second week of the study, as outlined in the research design in Figure 2. The organization's training center served as the location for the session. This site was familiar to the managers who participated, as most had attended previous (although unrelated to this study) training programs offered by the organization. The training center is in a convenient location near the primary workplaces of all participants. The classroom used for the training comfortably seated 20-25 participants. To best address adult learning principles such as active participation, to stay within the logistical constraints of the classroom, and to accommodate the busy schedules of the managers, the treatment group of 58 managers was distributed across three class sections to maximize participation rates. The three sessions followed the exact agenda and were delivered on consecutive days, allowing participants flexibility in selecting the session that best fit their schedule.

The curriculum for the classroom session was based on previous PsyCap intervention designs, and was reviewed by several subject matter experts throughout the curriculum development process. The content of the training session leveraged principles for development put forth by each of the PsyCap states, as well as training suggestions offered through the architecture of sustainable happiness model. The classroom session adhered to adult learning principles such as varying the training method throughout the session, minimizing the amount of lecture, and encouraging regular interaction by participants throughout the session.

In the classroom session, participants were encouraged to reflect openly with regard to their own management style and successes, and to share information with others in the class. An overview of the concepts of well-being, PsyCap, and each of the

component parts of PsyCap (efficacy, hope, optimism, and resilience) was presented. Participants were asked to think about and to list people who have contributed to their career success, and were provided time in class to write notes of appreciation to one or more selected members of their constituency. A goal-setting framework was provided, and each program participant wrote about one of their major goals. Following the principles described in the PsyCap literature, participants broke their goals into steps and considered the risks and available resources to help them overcome any potential roadblocks. They were then paired up to share their goals with a partner in class, and to provide feedback to assist in clarifying and refining the goals. The classroom session concluded with individual and group sharing of takeaways and commitments for the future.

To further refine the training session, a pilot program was delivered in advance of the sessions called for in the research design. The pilot program provided an opportunity for the facilitator to practice the delivery of the training program with an audience of volunteers who serve as managers in an organization other than the actual field site for this research project. Several questions from the pilot group session provided important information which was used to refine the curriculum.

The classroom training program for treatment group managers served as a major component of the intervention. In addition to the classroom session, the intervention included four weeks of follow-up activity. On each Monday morning in the four weeks following the classroom session (weeks 3-6), treatment group managers were sent an email from the primary investigator of this study. Participants were reminded of one or more concepts presented during the classroom training program, and asked to reflect on

their progress towards goals set during the program. Additionally, each email included instructions for an intentional activity related to the principles of PsyCap. These activities were designed to be able to be conducted in a short amount of time during the workday, and related to the manager's normal role and expectations. These simple activities included interviewing one or more of their direct reports about recognition; providing an intentional opportunity for their associates to share successes; reviewing their goal and action plan set during the classroom session; and affirming the strengths of their associates through private and specific recognition of when they were seen "at their best" within the last few days.

Manipulation check

To conclude the study, managers were asked to report their actual level of participation throughout the several week period of the PsyCap intervention. These data were designed to serve as a manipulation check to allow for more accurate testing of the hypotheses.

CHAPTER FOUR: RESULTS

This chapter reviews the analysis and results of the study. The first step in analyzing data was to determine data normality. All variables in this study were found to have skewness and kurtosis values near zero. Specifically, the PsyCap variable was found to have a skewness value of $-.337$ and kurtosis $-.311$. Employee engagement had skewness at $-.939$ and kurtosis at $.916$. Self-rated performance skewness and kurtosis values were $-.987$ and 2.014 , while manager-rated performance was at -1.221 and 1.918 respectively. Given that the acceptable ranges for these statistics are -2 to 2 for skewness and -7 to 7 for kurtosis, it was determined that this data set has acceptable normality and lends itself to further analysis.

Descriptive Statistics

Table 1 provides an overview of the descriptive statistics for the sample used in this study. Demographic data were collected from the human resources department of the organization. Females outnumbered males in the organization nearly three to one, with significantly more females than males in both management roles and in the associate ranks. The average age of employees was nearly 40 years, with managers and associates averaging 42.88 and 38.45 years, respectively. There was a wide range in employee age, from 19 to 70 with a standard deviation of 11.49 around the mean of 39.43 years. The average tenure in the organization was 5.31 years, with associates averaging 4.83 years and managers 7.02 years. Tenure also had a broad range, with several employees having been with the organization for less than one year, and others at more than 25 years (standard deviation was 4.87 years). Demographic variables of gender, age, and tenure

were not significantly different for control or treatment groups, suggesting that random assignment yielded the expected equivalence of groups.

----- INSERT TABLE 1 HERE -----

Scale Reliabilities and Psychometric Properties

The next step in analysis was to confirm whether, consistent with previous research, the assessments utilized in this study had acceptable internal reliability. As shown in Table 2, each of the four scales had excellent reliability on both the pre-test and post-test, with Cronbach's alpha coefficient greater than .80 for all scales and greater than .90 for five of the eight observed values.

----- INSERT TABLE 2 HERE -----

Manipulation Check

A post-test survey of managers in the treatment group was designed to serve as a manipulation check for the intervention. Managers were asked the extent to which they carried out each of the four activities provided via email at the beginning of each of the four weeks following the classroom training session. While all 58 of the treatment group managers participated in the 3.5 hour classroom training session, the additional items on the post-test survey provided information as to the participation level in the weeks following the classroom session. Fifty of the 58 treatment group managers responded to these additional post-test survey items. The four items were presented on a five point scale ranging from "did not participate" to "fully participated." The item mean score and percent of respondents who indicated active participation in the activity, as noted by a 4 or 5 rating, were as follows: Week 1: 3.80, 66%; Week 2: 3.68, 60%; Week 3, 3.68, 54%; Week 4: 3.86, 64%. Although these data suggest that managers generally followed

through on the suggestions provided on a weekly basis, there were between 6-10% of managers each week who indicated that they did not participate in the suggested activities.

Exploratory Data Analysis

Continuing the analysis process, data were reviewed for each of the various sample categories – managers and associates, control and treatment, pre-test and post-test for each of the four variables in the study (PsyCap, employee engagement, and self- and manager-rated performance). Table 3 provides a summary of the sample sizes, means, and standard deviations for each of the categories mentioned above.

----- INSERT TABLE 3 HERE -----

The exploratory data analysis led to several observations. First, there were acceptable response rates for each of the scales, sample frames, and time periods. Although the analysis was limited by the size of the organization (approximately 500 employees, with 110 employees responsible for management activities), valid responses were obtained from more than 85% of managers and more than 70% of associates on each of the variables at each time period. Similar response rates were obtained for both the pre-test and post-test time periods.

In looking closer at Table 3, it appears that the mean scores for several of the study variables were high. On the PsyCap survey, mean scores at the time of the pre-test were all at or above 5.0 on a six point scale. For the employee engagement survey, responses were 4.1 or higher on a five point scale. Self-rated performance, a nine point scale, had mean scores at the time of the pre-test ranging from 8.06 to 8.29 across groups. Finally, the manager-rated performance scale, with nine possible response options, had

mean scores of 7.19 to 8.09 at the time of the pre-test. As will be explored more fully in the discussion chapter later in this paper, these mean scores may indicate that the organization has several aspects of a positive work culture, but may also create a challenge of a possible ceiling effect.

Following a review of the descriptive statistics presented in Table 3, the analysis moved into a deeper review of the variance between groups. Table 4 provides results of the ANOVA tests. Specifically, to further assess the equivalence between control and treatment groups, ANOVAs were conducted on each of the four pre-test measures in the manager and associate samples. For the manager sample, no significant difference was found between the control and treatment groups on the pre-test for the PsyCap, employee engagement, or self-rated performance measures. For the manager-rated performance measure, the treatment group did rate slightly higher than the control group ($F = 6.64, p < .05$). For the associate sample, no significant difference was found between the control and treatment groups on the pre-test for any of the four measures. Overall, it appears that, due to random sampling of employees to control and treatment groups in this experimental design, there was reasonable equivalence between groups, allowing for further analysis.

----- INSERT TABLE 4 HERE -----

Hypothesis Testing

The discussion in this chapter and illustrations in Tables 1-4 reviewed information on data normality, scale reliabilities and psychometric properties, sample means and standard deviations, and equivalence between groups. Given this information and the associated findings, the next step is to test each of the proposed hypotheses.

Hypothesis 1a posited that PsyCap levels would increase for managers who participated in the PsyCap micro-intervention. The mean score for the treatment group did move in the hypothesized direction, increasing from 5.33 to 5.35 from the pre-test to the post-test. Further analysis of this variance indicates that the treatment group post-test mean score of 5.35 was not significantly different than the post-test mean score of 5.19 in the control group. Given this information, Hypothesis 1a is not supported.

Similarly, Hypothesis 1b proposed that manager performance would increase following participation in the PsyCap micro-intervention. Table 3 indicates that this was not the case for either self-rated performance or manager-rated performance. Further, the post-test means for the treatment group were not significantly different than the post-test means for the control group on either measure of performance. As such, Hypothesis 1b is not supported.

The second set of hypotheses focused on testing for the potential contagion effect of a PsyCap micro-intervention. More specifically, Hypothesis 2a projected that follower PsyCap would increase for associates who directly reported to managers who participated in the PsyCap micro-intervention. A review of the means for the associate sample in Table 3 offered initial support for this hypothesis, with a modest increase in the mean score for the treatment group from pre-test to post-test. Although this increase was not statistically significant, further analysis explored the relationship between the control and treatment groups. The PsyCap ratings for the control group actually decreased during the same time period, while the treatment group experienced a slight increase. There was no significant difference in PsyCap scores between the control and treatment groups at the pre-test, but the post-test ratings were significantly different ($F = 4.43, p < .036$). These

results provide preliminary support for Hypothesis 2a and the contagion effect of the PsyCap intervention.

Hypothesis 2b explored the potential contagion effect of employee engagement for associates who directly reported to managers who participated in the PsyCap micro-intervention. Although the mean score on the pre-test for associates was a very high 4.27 on a five point scale, Table 3 indicates an increase in employee engagement to 4.31 at the time of the post-test. Further analysis of variance, however, notes that the treatment group of associates did not vary significantly from the control group in their level of employee engagement at the time of the post-test. Given this information, Hypothesis 2b is not supported in this study.

The final hypothesis in this study addressed the potential in performance gains for associates in the treatment group. Again, initial data from the means presented in Table 3 suggest that this may be the case. Mean scores of self-rated performance for the treatment group increased from 8.29 to 8.34, and manager-rated performance increased from 7.44 to 7.57 from pre-test to post-test. Although the observed mean scores did increase, the increase did not vary significantly from the control group on either measure of performance, as shown in Table 4. This further analysis does not provide support for Hypothesis 2c.

Post-Hoc Analyses

The hypotheses put forth in this study were concerned with outcomes associated with the PsyCap intervention designed for use in this project. However, given the importance and need for understanding relationships between different theories and constructs, additional post-hoc analyses were conducted. More specifically, bivariate

correlations were conducted with pre-test data for the variables. Table 5 shows the means, standard deviations, and correlation matrix for this post-hoc analysis.

----- INSERT TABLE 5 HERE -----

The correlation matrix includes two demographic characteristics, age and tenure, as well as the four variables explored in this study (PsyCap, employee engagement, and self- and manager-rated performance). Correlations greater than .13 are noted as significant ($p < .01$). Although age and tenure are strongly related ($r = .43$, $p < .01$), neither age nor tenure correlate significantly to any of the other variables in the matrix. PsyCap does correlate significantly with employee engagement ($r = .51$, $p < .01$), self-rated performance ($r = .44$, $p < .01$), and manager-rated performance ($r = .15$, $p < .01$). Additionally, employee engagement correlates with both self-rated performance ($r = .23$, $p < .01$) and manager-rated performance ($r = .20$, $p < .01$).

CHAPTER FIVE: DISCUSSION

This study set out to explore the relationship between PsyCap development and workplace outcomes including employee engagement and performance. In addition, this study was among the first to explore the potential contagion effect where manager participation in a PsyCap micro-intervention positively impacts the engagement and performance of the employees they manage. Using an experimental design with random assignment to control and treatment groups, this study utilized both a pre-test and post-test, with an intervention for managers in the treatment group. The next section of this chapter provides a general review of the intervention, and reflections from participants. The chapter continues with a review of the results of the hypothesis testing and other analysis, and further interprets the results. The chapter concludes with a discussion of the strengths, limitations, practical implications, and future research directions.

PsyCap Intervention Review and Discussion

The intervention in this project involved the participation of 58 treatment group managers in a 3.5 hour classroom program. Following the program these managers received one email per week to reinforce one or more of the concepts discussed in class, and to provide a specific and actionable activity for them to carry out during the week.

The intervention was well-received by the participants. Classroom sessions involved a high level of interaction, with sessions concluding with each participant sharing at least one thing they learned and at least one commitment for future application. In addition, the weekly activities emailed to participants were often carried out as recommended, as evidenced by the manipulation check data presented in the previous chapter. When asked to reflect on which of the four weekly activities were the most

helpful, each of the weeks was mentioned several times. Weeks one (employee recognition interview) and four (affirming strengths) were each selected as the most helpful activity by 16 managers each. Week three (goals review) and week two (success review) were mentioned 11 and 7 times, respectively.

The post-test for treatment group managers also included an open-ended question regarding any observed changes in management style or reactions from their associates. Many of the respondents provided rich descriptions of changes that they had either personally experienced or that they had observed in their team members. Several themes emerged from these responses.

First, a number of managers mentioned benefitting from the opportunity to slow down, ask their associates questions, and listen attentively to the responses. This change caused a few managers to comment specifically regarding their own increased levels of awareness. One manager mentioned that they have a deeper understanding of their employees, and that they have learned what motivates each of them and how different they are. In the words of another manager, “I have learned so much about my team in the last four weeks thanks to the positive interviews – great tool!”

In addition to reporting increased awareness and enhanced listening skills, a few managers noted that their team members had reacted positively to their recent actions. “They comment that they like the approach we are taking as supervisors and managers not only to care for employees but to take time to listen to their needs.” Finally, one manager noted that they had received “a few comments why I was being so nice.” Comments such as these support the notion of a potential contagion effect, as the change

to a more positive management style seems to be apparent to the employees who directly report to the managers.

Another important aspect of the PsyCap intervention was the focus on providing positive recognition. Several managers commented that they have changed their management style to incorporate more opportunities for recognition and positive affirmation, and that their associates reacted positively to this change. In the words of one manager, “I have taken the time to do more on the spot recognition. The employees love the attention and knowing that what they do is appreciated.” Another manager commented, “I noticed that if my team is recognized for their positive contributions and their successes, they stay on a ‘high.’ They are more likely to keep that positive attitude and consistent work quality going.” Finally, one manager changed their approach to the work day by implementing a “morning kick off in which we discuss successes as a group and celebrate.”

In addition to this positive feedback from managers regarding the PsyCap intervention, there were a handful of managers who shared some challenges in applying what they learned. The main challenge came down to time. Although the recommended weekly activities were relatively simple and would typically fit into the normal and routine set of expectations placed on managers, one manager noted that several of their employees were in role transition and it was difficult to prioritize the activities. Another manager noted that they were personally in transition from managing one team to another and, although they didn’t have time to apply their learning during the study period, they intend to do so in the future. Still other managers mentioned that while they had learned and seen some initial benefits from the PsyCap micro-intervention, they believe that it

will be important to continue to apply what they have learned in the future to maximize the potential impact. This feedback raises a question for future research to explore regarding the optimal length of the intervention.

Discussion of Hypotheses and Results

The mixed results in hypothesis tests reviewed in the previous chapter lead to several issues to be discussed. To begin, an important contribution of this study is the initial evidence supporting Hypothesis 2a and the PsyCap contagion effect. Although the associates in the treatment group did not directly participate in the intervention, increases in their PsyCap throughout the study period were observed. Further, although there was no difference in the pre-test PsyCap ratings between the control and treatment groups, the post-test PsyCap ratings were statistically significantly higher for the treatment group. This finding extends previous research on PsyCap development and suggests that managers can learn to be more positive through a micro-intervention, and that the impact of their changed behavior may lead to increases in the PsyCap of their associates.

Several managers who participated in the PsyCap micro-intervention noticed anecdotal changes in their associates following the intervention period. Some comments were general, referencing changes such as a more positive attitude put forth by their employees. Other managers were more explicit in noting changes in the PsyCap of their associates. Specifically, one manager commented, “My team members feel more confident and they give each day their best – since each member of the team knows that they are valued and that their management team cares.” The hypothesis test and comments like these provide evidence in support of a PsyCap contagion effect.

Several of the hypotheses proposed in this study had minimal support, or were not supported, as detailed in the results in the previous chapter. To review, Hypothesis 1a predicted that manager PsyCap would increase for managers who participated in the PsyCap micro-intervention. Several previous studies (e.g. Luthans et al., in press; Luthans, Avey, & Patera, 2008) have provided initial evidence in support of this premise.

There are two potential reasons as to why the current study did not confirm previous findings. First, an examination of the pre-test data on manager PsyCap levels indicates the possible presence of a ceiling effect. As noted in Table 3, manager PsyCap pre-test levels in the treatment group had a mean level of 5.33 on a six point scale. Further, a review of the frequencies of each response indicates that the most common response, or mode, for 20 of the 24 items was the highest possible response option, “strongly agree.” While these impressive statistics provide evidence of a positive workplace, they create a phenomenon known as the ceiling effect, and allow for a limited opportunity for the ratings to increase from pre-test to post-test.

Second, a possible explanation for the lack of support for Hypothesis 1a may be that the intervention carried out in the current study did not focus solely on the development of the manager PsyCap, as has been the case in previous PsyCap intervention studies. The current study utilized curriculum that was predicted to be able to increase manager PsyCap levels, but was also intended to put concepts in the hands of the manager that would allow them to invest in their team members in a different and more positive way. Further, the primary emphasis of the four weekly follow-up activities largely focused on developing others, not on developing the PsyCap of the manager. While it was hypothesized that manager PsyCap would increase throughout the

intervention, possibly for the reasons offered here, the data from the present study did not support that notion.

Hypothesis 1b proposed that manager performance would increase following the PsyCap micro-intervention. As noted in chapter four, although the observed mean scores did increase slightly for both the self-rated and the manager-rated performance, these gains did not differ in a statistically significant way when compared with the control group. As with the previous hypothesis, the possible presence of a ceiling effect may explain the lack of evidence supporting the hypothesis. The mean score for treatment group managers on the pre-test was 8.29 for the self-rated performance and 8.09 on the manager-rated performance, both on a nine-point scale. Again, a review of the frequencies of responses provides additional information. For the self-rated performance, the most common response was the maximum “9” on three of the five items, and “8” on the other two items. For manager-rated performance the maximum “9” response was most common for all five items. While it would have been possible for minimal gains in performance as a result of the PsyCap intervention, the strong performance ratings of the managers at the time of the pre-test seems to have placed a limitation on the likelihood that an intervention would lead to statistically significant increases in performance.

Hypothesis 2a, 2b, and 2c were concerned with the potential contagion effect of the PsyCap micro-intervention. As noted and discussed earlier, Hypothesis 2a experienced initial support. Although the observed mean scores for Hypothesis 2b and 2c did move in the proposed direction from the pre-test to the post-test, further analysis failed to find a statistically significant difference in support of either of these two hypotheses. Possible explanations are offered in the pages that follow.

Hypothesis 2b posited that employee engagement would increase for associates reporting to managers who participated in the PsyCap micro-intervention. This hypothesis was derived from the theoretical relationships between PsyCap and employee engagement described in chapter two, as well as initial evidence of the relationship between PsyCap and another measure of employee engagement (Avey, Wernsing, & Luthans, 2008). Although observed mean scores for the treatment group of associates increased from 4.27 to 4.31 from the pre-test to post-test, this increase was not statistically significant. Two possible explanations are described in the paragraphs that follow.

First, as suggested with other variables utilized in earlier hypotheses, there is evidence of a potential ceiling effect. The pre-test mean level of employee engagement for the treatment group was 4.27 on a 5 point scale. The maximum response option, “strongly agree,” was the most common answer on eleven of the twelve items used to measure employee engagement in this study. Further, a July 2008 Gallup poll of 23,572 working adults in the United States found that only 29% of respondents were engaged, with 51% not engaged and 20% actively disengaged. Clearly, the organization serving as the field site for this study is not average, and in fact may be well above average to the point that meaningful increases in employee engagement will be difficult to measure given the presence of a ceiling effect.

It should also be noted that the present study involved a PsyCap intervention, not an intervention designed specifically to create an engaged workplace. Employee engagement as operationalized in the present study is concerned with twelve specific elements of engagement in the workplace. Wagner and Harter (2006) provide a thorough

review of each of the twelve elements, as well as examples of strategies to employ when attempting to increase levels of employee engagement. Other authors (Earl, Lampe, & Buskin, 2006) suggest that attempts to drive increases in employee engagement should be intentional and should focus specifically on the elements themselves (e.g. “I know what is expected of me at work” or “I have the materials and equipment I need to do my work right”). While the PsyCap micro-intervention addressed related issues, it is possible that only a more specific focus on the elements of engagement would have led to significant increases.

Hypothesis 2c, the final hypothesis put forth in the present study, predicted that performance would increase for associates reporting directly to managers who participated in the PsyCap micro-intervention. As shown in Table 2, modest increases in mean scores for the treatment group of associates were observed from the pre-test to post-test for both self-rated performance (8.29 to 8.34) and manager-rated performance (7.44 to 7.57). As was the case with some of the other hypothesis tests put forth in this study, the modest differences in the expected direction were not statistically significant when compared to the control group. Once again, the presence of a ceiling effect is likely, as the pre-test mean for self-rated performance on the pre-test was 8.29 on a nine point scale, with the most common response for all five items being the highest possible rating.

Beyond the hypothesis testing, the post-hoc analyses conducted in this study and reported in detail in the previous chapter, offer several meaningful contributions. The bivariate correlations between age, gender, PsyCap, employee engagement, and self- and manager-rated performance provide additional information that is helpful in understanding the relationships between the constructs. First, as it relates to the

demographic characteristics, it should be noted that neither age nor tenure relate significantly to PsyCap, employee engagement, or performance. This finding suggests that these variables generally exist across demographic boundaries. Next, this is the first study to measure the relationship between PsyCap and Gallup's measure of the elements of employee engagement, finding a significant correlation ($r = .51, p < .01$). Finally, the post-hoc analyses conducted here found a significant relationship between PsyCap and both self-rated performance ($r = .44, p < .01$), and manager-rated performance ($r = .15, p < .01$), adding to a growing body of research with similar results (Luthans, Avey, Clapp-Smith, et al., 2008; Luthans, Avolio, et al., 2007; Luthans et al., 2005; Luthans, Norman, et al., 2008).

Strengths and Limitations

This study has several strengths and limitations that help to better understand and interpret the findings. First of all, the experimental design with random assignment of subjects to control and treatment groups stands out as a strength of the study, and offers internal validity. All but one of the variables explored in the study had initial equivalence at the time of pre-test, which is likely a benefit of random assignment. This initial equivalence helps to rule out many of the alternative explanations for results, and focuses the attention on the variables being manipulated. In this study, the experimental design allowed for the attention to be placed on the PsyCap micro-intervention and potential relationships with the associated dependent variables.

Conducting the study in a field setting was another positive attribute offered by this study. While conducting field research often presents many challenges, leaders at this research site were very supportive of the project without getting too involved. They

provided information when needed, provided the space and logistical support for the training sessions, and encouraged participation without compromising confidentiality and while allowing the researcher to maintain a necessary level of independence. Participants were very responsive and asked clarifying questions throughout the project.

This project involved an organizational census in a mid-sized regional financial organization. All employees, including corporate and in the retail branch locations, participated in the study. It should be noted that there were not significant differences observed between corporate and the branch locations. Given this information, findings may be able to be generalized to other similar financial institutions.

While the field site provided several strong points to the study, as noted above, it also contributed to a major weakness of the study. For several months leading up to this study, financial institutions around the United States and the world had experienced tremendous losses, turmoil, and increasing levels of scrutiny due to the global financial crisis. Although the organization that served as the field site for this study had also just experienced one of their most difficult years financially, the culture of the organization remained positive and strong. As such, there were several instances of difficulty in finding significant changes in the data from pre-test. In many cases, as noted earlier in this report, the mode and the maximum ratings were often the same response. Also, given the limited sample size and various subgroups of data (control and treatment; manager and associate), many of the more rigorous statistical analysis techniques to normalize the data distribution were not feasible.

Implications for Practice

This study provides several significant implications for management practice and organizational behavior. First, this is among the first studies to test for and find preliminary evidence of a contagion effect of a PsyCap micro-intervention. Although only the managers participated directly in the intervention, their associates' PsyCap levels increased from the beginning to end of the study period. This result is especially meaningful for organizations given the expense and time requirement for most training initiatives. In this study, other than manager participation in the 3.5 hour classroom training program, the intervention involved only minimal amounts of time and simple changes to the ways managers interact with their associates.

Additionally, the intentional activities developed for and utilized in this study extend previous work on PsyCap interventions (e.g. Luthans, Avey, Avolio, Norman, & Combs, 2006) into a tangible and robust training curriculum. The intervention used in this study pulled in developmental research from each of the PsyCap states (efficacy, hope, optimism, and resilience), as well as the emerging PsyCap intervention literature itself. Further, the present study combined other work on well-being and happiness (Lyubomirsky, Sheldon, & Schkade, 2005) more specifically than previous studies.

Another contribution made by this study comes from the post-hoc analyses exploring the correlations between study variables. Most notable is the relationship between PsyCap and employee engagement, and the linkage to performance. Organizations will continue to search for ways to build great places to work and to improve their performance. This study suggests that PsyCap and engagement may be valuable ways to drive important outcomes in organizations.

Directions for Future Research

The results and discussion presented in this study lead to several directions for future research. First, as noted earlier in this chapter, a ceiling effect in the data presented a challenge in finding significant differences between the pre- and post-test. Future research could explore this ceiling effect, and examine potential differences in PsyCap interventions with high-performing and low-performing organizations. It is possible that both the approach to the intervention and the magnitude of results would differ based on the context. Direct measures of performance (e.g. monthly sales, dollars per transaction, or total number of customers served, or other measures not measured on Likert scale) as the dependent variable may help to alleviate the challenges presented by the ceiling effect and would likely provide further insights into the PsyCap-performance relationship.

Future research might also build on the intervention model introduced here, and explore interventions of alternate length. While the six-week duration of the intervention is practical in a field site and consistent with related research in positive psychology and leadership studies, it is possible that a shorter or longer intervention would yield different results. Further, introducing multiple measures over a longitudinal period of time would likely provide additional information related to the sustainability impact from the PsyCap intervention.

Finally, future researchers are encouraged to explore the potential presence of moderators such as developmental readiness of the managers, or organizational support for the PsyCap initiative. Building on the research reviewed and presented in this study, future researchers are encouraged to pursue these and other questions in an effort to more fully understand PsyCap, engagement, and performance.

Conclusion

The world is experiencing more difficult economic conditions than have been seen in more than a generation. In these times of double-digit unemployment, ballooning federal deficits, and impending periods of inflation, organizations are struggling to stay viable, let alone successful. While doing more with less was once a competitive advantage, it seems that today it is simply a necessity for those organizations that want to survive these difficult times. At the same time, healthcare costs continue to rise and conversations about well-being continue to gain traction in boardrooms around the country.

So how can organizations survive and succeed? Building on the foundations of traditional economic, human, and social capital, researchers have turned their attention to Positive Psychological Capital (PsyCap) as a source for competitive advantage. Research suggests that investing in PsyCap strengthens organizations in a variety of ways. This study provides additional support for this notion, and offers initial evidence for the contagion effect as a possible way to spread PsyCap throughout organizations in a simple yet effective manner. By applying research put forth by PsyCap scholars, organizations appear more likely to enjoy both positive and successful workplaces for the future.

REFERENCES

- Adams, V.H., Snyder, C.R., Rand, K.L., King, E.A., Sigmon, D.R., & Pulvers, K.M. (2002). Hope in the workplace. In R. Giacolone & C. Jurkiewics (Eds.), *Handbook of workplace spirituality and organizational performance* (pp. 367-377). New York: Sharpe.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 353-373). New York: Russell Sage Foundation.
- Ashkanasy, N.M. (2003). Emotions in organizations: A multilevel perspective. In F. Dansereau & F.J. Yammarino (Eds.), *Research in multi-level issues, Vol. 2: Multi-level issues in organizational behavior and strategy* (pp. 9-54). Oxford: Elsevier Science.
- Ashkanasy, N.M., & Ashton-James, C.E. (2007). Positive emotion in organizations: A multi-level framework. In D.L. Nelson & C.L. Cooper (Eds.), *Positive organizational behavior* (pp. 57-73). Thousand Oaks, CA: Sage.
- Averill, J.R., Catlin, G., & Chon, K.K. (1990). *Rules of hope*. New York: Springer-Verlag.
- Avey, J., Avolio, B., & Luthans, F. (in press). Experimentally analyzing the impact of leader positivity on follower positivity and performance. *Leadership Quarterly*.
- Avey, J.B., Luthans, F., & Jensen, S. (2009). Psychological capital: A positive resource for combating stress and turnover. *Human Resource Management, 48*, 677-693.
- Avey, J.B., Luthans, F., & Mhatre, K.H. (2008). A call for longitudinal designs in POB and PsyCap research. *Journal of Organizational Behavior, 29*, 705-711.

- Avey, J.B., Patera, J.L., & West, B.J. (2006). The implications of positive psychological capital on employee absenteeism. *Journal of Leadership and Organizational Studies, 13*(2), 42-60.
- Avey, J.B., Wernsing, T.S., & Luthans, F. (2008). Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. *Journal of Applied Behavioral Science, 44*, 48-70.
- Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1977b). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*, 117-148.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2007). Cultivate self-efficacy for personal and organizational effectiveness. In E.A. Locke (Ed.), *The Blackwell Handbook of Principles in Organizational Behavior* (pp. 120-136). Oxford: Blackwell Publishing.
- Bandura, A., Adams, N.E., & Beyer, J. (1977). Cognitive processes mediating behavior change. *Journal of Personality and Social Psychology, 35*, 124-139.
- Bandura, A., & Locke, E.A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88*, 87-99.

- Barsade, S.G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, 47, 644-675.
- Block, J.H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W.A. Collins (Ed.), *Minnesota symposium of child psychology* (pp. 39-101). Hillsdale, NJ: Erlbaum.
- Block, J., & Kremen, A.M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, 70, 349-361.
- Bono, J.E., & Ilies, R. (2006). Charisma, positive emotions, and mood contagion. *The Leadership Quarterly*, 17, 317-334.
- Bordin, E.S. (1994). Theory and research on the therapeutic working alliance: New directions. In A.O. Horvath & L.S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 13-37). New York: Wiley.
- Boyd, N.G., & Vozikis, G.S. (1994). Influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18, 63-77.
- Bryant, F.B., & Cvengros, J.A. (2004). Distinguishing hope and optimism. *Journal of Social and Clinical Psychology*, 23, 273-302.
- Buckingham, M. & Coffman, C. (1999). *First, break all the rules: What the world's greatest managers do differently*. New York: Simon & Schuster.
- Burke, M.J., & Day, R.R. (1986). A cumulative study of the effectiveness of management training. *Journal of Applied Psychology*, 71, 232-245.

- Cameron, K.S., & Caza, A. (2004). Contributions to the discipline of positive organizational scholarship. *American Behavioral Scientist, 47*, 731-739.
- Cameron, K.S., Dutton, J., & Quinn, R. (Eds.). (2003). *Positive organizational scholarship: Foundations of a new discipline*. San Francisco: Berrett-Koehler.
- Carifio, J., & Rhodes, L. (2002). Construct validities and the empirical relationships between optimism, hope, self-efficacy, and locus of control. *Work, 19*, 125-136.
- Carver, C.S., & Gaines, J.G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research, 11*, 449-462.
- Carver, C.S., Lehman, J.M., & Antoni, M.H. (2003). Dispositional pessimism predicts illness-related disruption of social and recreational activities among breast cancer patients. *Journal of Personality and Social Psychology, 84*, 813-821.
- Carver, C.S., & Scheier, M.F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Carver, C.S., & Scheier, M. (2003). Optimism. In S.J. Lopez & C.R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 75-89). Washington, DC: American Psychological Association.
- Carver, C.S., Scheier, M.F., Miller, C.J., & Fulford, D. (2009). Optimism. In S.J. Lopez & C.R. Snyder (Eds.), *Oxford Handbook of Positive Psychology, 2nd Edition* (pp. 303-311). Oxford: Oxford University Press.
- Chartrand, T.L., & Cheng, C.M. (2002). The role of nonconscious goal pursuit in hope. *Psychological Inquiry, 13*, 290-294.

- Chemers, M.M., Watson, C.B., & May, S.T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin*, 26, 267-277.
- Clapp-Smith, R., Vogelgesang, G.R., & Avey, J.B. (2009). Authentic leadership and positive psychological capital: The mediating role of trust at the group level of analysis. *Journal of Leadership and Organizational Studies*, 15, 227-240.
- Clifton, D.O. (2000). Positive management: New perspectives on leadership and employee well-being. *The Psychologist-Manager Journal*, 4, 125-127.
- Cohn, M.A., & Fredrickson, B.L. (2009). Broaden-and-build theory of positive emotions. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 105-110). Oxford: Wiley-Blackwell.
- Coutu, D. (2002). How resilience works. *Harvard Business Review*, 80(5), 45-55.
- Cropanzano, R., & Wright, T.A. (2001). When a “happy” worker is really a “productive” worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research*, 53, 182-199.
- Csikszentmihalyi, M., & Wong, M.M. (1991). The situational and personal correlates of happiness: A cross-national comparison. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective* (pp. 193-212). Elmsford, NY: Pergamon Press.
- Cutuli, J.J., & Masten, A.S. (2009). Resilience. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 837-843). Oxford: Wiley-Blackwell.

- Danner, D.D., Snowdon, D.A., & Friesen, W.V. (2001). Positive emotions in early life and longevity: Findings from the nun study. *Journal of Personality and Social Psychology, 80*, 804-813.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*, 34-43.
- Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? *Social Indicators Research, 57*, 119-169.
- Diener, E., Suh, E.M., Lucas, R.E., and Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276-302.
- Doe, P.J. (1994). Creating a resilient organization. *Canadian Business Review, 21*, 22-26.
- Doherty, R.W. (1998). Emotional contagion and social judgment. *Motivation and Emotion, 22*, 187-209.
- Earl, J., Lampe, M.D, & Buskin, A. (2006). What to do with employee survey results. *Gallup Management Journal Online, August 10, 2006*, 1-6.
- Edwards, L.M. (2009). Hope. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 487-491). Oxford: Wiley-Blackwell.
- Fitzgerald, T.E., Tennen, H., Affleck, G., & Pransky, G.S. (1993). The relative importance of dispositional optimism and control appraisals in quality of life after coronary artery bypass surgery. *Journal of Behavioral Medicine, 16*, 25-43.
- Fleming, J.H., & Asplund, J. (2007). *Human Sigma: Managing the employee-customer encounter*. New York: Gallup Press.
- Frayne, C.A., & Latham, G.P. (1987). Application of social learning theory to employee self-management of attendance. *Journal of Applied Psychology, 72*, 387-392.

- Frederick, S., & Lowenstein, G. (1999). Hedonic adaptation. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 302-329). New York: Russell Sage Foundation.
- Fredrickson, B. (1998). What good are positive emotions? *Review of General Psychology*, 2, 300-319.
- Fredrickson, B. (2000). Why positive emotions matter in organizations: Lessons from the Broaden-and-Build model. *The Psychologist-Manager Journal*, 4, 131-142.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218-226.
- Fredrickson, B.L. (2003). Positive emotions and upward spirals in organizations. In K.S. Cameron, J.E. Dutton, & R.E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 163-175). San Francisco, CA: Berrett-Koehler.
- Froh, J.J. (2009). Positive emotions. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 711-717). Oxford: Wiley-Blackwell.
- Garnezy, N. (1991). Resiliency and vulnerability of adverse developmental outcomes associated with poverty. *American Behavioral Scientist*, 34, 416-430.
- Garnezy, N. (1993). Vulnerability and resistance. In D.C. Funder, R.D. Parke, C. Tomlinson-Keasey, & K. Widaman (Eds.), *Studying lives through time: Personality and development* (pp. 377-398). Washington, DC: American Psychological Association.

- Garnezy, N., Masten, A.S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for development. *Child Development, 55*, 97-111.
- George, J. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology, 76*, 299-307.
- George, J. (1995). Leader positive mood and group performance: The case of customer service. *Journal of Applied Social Psychology, 25*, 778-794.
- George, J.G., & Brief, A.P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin, 112*, 310-329.
- Gist, M.E. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of Management Review, 12*, 472-485.
- Gist, M.E. (1989). The influence of training method on self-efficacy and idea generation among managers. *Personnel Psychology, 42*, 787-805.
- Gist, M.E., & Mitchell, T.R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17*, 183-211.
- Gist, M.E., Schwoerer, C., & Rosen, B. (1989). Effects of alternative training methods on self-efficacy and performance in computer software training. *Journal of Applied Psychology, 74*, 884-891.
- Gooty, J., Gavin, M., Johnson, P.D., Frazier, M.L., & Snow, D.B. (2009). In the eyes of the beholder: Transformational leadership, positive psychological capital, and performance. *Journal of Leadership and Organizational Studies, 15*, 353-367.

- Harland, L., Harrison, W., Jones, J., & Reiter-Palmon, R. (2005). Leadership behaviors and subordinate resilience. *Journal of Leadership and Organizational Studies*, 11, 2-14.
- Harter, J. (2000). Managerial talent, employee engagement, and business-unit performance. *The Psychologist-Manager Journal*, 4, 215-224.
- Harter, J. (2009). Employee engagement. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 330-335). Oxford: Wiley-Blackwell.
- Harter, J.K., & Blacksmith, N. (2010). Employee engagement and the psychology of joining, staying in, and leaving organizations. In P.A. Linley, S. Harrington, & N. Garcea (Eds.), *Oxford handbook of positive psychology and work* (pp. 121-130). Oxford: Oxford University Press.
- Harter, J.K., Hayes, T.L., & Schmidt, F.L. (2004). *Meta-analytic predictive validity of Gallup Selection Research Instruments (SRI)*. Omaha, NE: The Gallup Organization.
- Harter, J.K., Schmidt, F.L., Asplund, J.W., & Killham, E.A. (2005). *Employee engagement and performance: A meta-analytic study of causal direction*. Omaha, NE: The Gallup Organization.
- Harter, J.K., Schmidt, F.L., & Hayes, T.L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87, 268-279.
- Harter, J.K., Schmidt, F.L., Killham, E.A., & Agrawal, S. (2009). *Q^{I2}® meta-analysis: The relationship between engagement at work and organizational outcomes*. Omaha, NE: Gallup.

- Hatfield, E., Cacioppo, J.T., & Rapson, R.L. (1993). Emotional contagion. *Current Directions in Psychological Science*, 2, 96-99.
- Heilman, M.E., Block, C.J., & Lucas, J.A. (1992). Presumed incompetence? Stigmatization and affirmative action efforts. *Journal of Applied Psychology*, 77, 536-544.
- Horne, J.F., & Orr, J.E. (1998). Assessing behaviors that create resilient organizations. *Employment Relations Today*, 24(4), 29-40.
- Irving, L., Snyder, C.R., & Crowson, J.J. (1998). Hope and the negotiation of cancer facts by college women. *Journal of Personality*, 66, 195-214.
- Isen, A.M. (2003). Positive affect, systematic cognitive processing, and behavior: Toward integration of affect, cognition, and motivation. In F. Dansereau & F.J. Yammarino (Eds.), *Research in multi-level issues, Vol. 2: Multi-level issues in organizational behavior and strategy* (pp. 55-72). Oxford: Elsevier Science.
- Isen, A.M., & Baron, R.A. (1991). Positive affect as a factor in organizational behavior. *Research in Organizational Behavior*, 13, 1-53.
- John F. Kennedy Presidential Library and Museum (n.d.). *Remarks of Robert F. Kennedy at the University of Kansas, March 18, 1968*. Retrieved December 20, 2009, from <http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Speeches/RFK/RFKSpeech68Mar18UKansas.htm>.
- Judge, T.A., Jackson, C.L., Shaw, J.C., Scott, B.A., & Rich, B.L. (2007). Self-efficacy and work-related performance: The integral role of individual differences. *Journal of Applied Psychology*, 92, 107-127.

- Judge, T.A., Thoresen, C.J., Bono, J.E., & Patton, G.K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, *127*, 376-407.
- Kahn, W.A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*, 692-724.
- Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 3-25). New York: Russell Sage Foundation.
- Keyes, C.L.M., & Haidt, J. (2003). Introduction: Human flourishing – the study of that which makes life worthwhile. In C.L.M. Keyes, & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 3-12). Washington, DC: American Psychological Association.
- Klohnen, E.C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of Personality and Social Psychology*, *70*, 1067-1079.
- Lam, S., Chen, X., & Schaubroeck, J. (2002). Participative decision making and employee performance in different cultures: The moderating effects of allocentrism/idiocentrism and efficacy. *Academy of Management Journal*, *45*, 905-914.
- Larson, M., & Luthans, F. (2006). Potential added value of psychological capital in predicting work attitudes. *Journal of Leadership and Organizational Studies*, *13*, 75-92.

- Latham, G.P., & Frayne, C.A. (1989). Self-management training for increasing job attendance: A follow-up and a replication. *Journal of Applied Psychology, 74*, 411-416.
- Locke, E.A., Frederick, E., Lee, C., & Bobko, P. (1984). Effect of self-efficacy, goals, and task strategies on task performance. *Journal of Applied Psychology, 69*, 241-251.
- Lee, C., & Bobko, P. (1994). Self-efficacy beliefs: Comparison of five measures. *Journal of Applied Psychology, 79*, 364-369.
- Lopez, S.J., Snyder, C.R., Nagyar-Moe, J.L., Edwards, L.M., Teramoto-Pedrotti, J., Janowski, K., Turner, J.L., & Pressgrove, C. (2004). Strategies for accentuating hope. In P.A. Linley & S.J. Joseph (Eds.) *Positive Psychology in Practice* (pp. 388-404). Hoboken, NJ: Wiley.
- Lopez, S.J., Snyder, C.R., & Teramoto-Pedrotti, J. (2003). Hope: Many definitions, many measures. In S.J. Lopez & C.R. Snyder (Eds.), *Positive Psychological Assessment: A Handbook of Models and Measures* (pp. 91-107). Washington, DC: American Psychological Association.
- Luthans, F. (2002a). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior, 3*, 695-706.
- Luthans, F. (2002b). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Executive, 16*, 57-72.
- Luthans, F., Avey, J.B., Avolio, B.J., Norman, S.M., & Combs, G.M. (2006). Psychological capital development: Toward a micro-intervention. *Journal of Organizational Behavior, 27*, 387-393.

- Luthans, F., Avey, J.B., Avolio, B.J., & Peterson, S.J. (in press). Impact of a micro-training intervention on psychological capital development and performance. *Human Resource Development Quarterly*.
- Luthans, F., Avey, J.B., Clapp-Smith, R., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *The International Journal of Human Resource Management*, 19, 818-827.
- Luthans, F., Avey, J.B., & Patera, J.L. (2008). Experimental analysis of a web-based training intervention to develop positive psychological capital. *Academy of Management Learning and Education*, 7, 209-221.
- Luthans, F., Avolio, B.J., Avey, J.B., & Norman, S.M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60, 541-572.
- Luthans, F., Avolio, B.J., Walumbwa, F., & Li, W. (2005). The psychological capital of Chinese workers: Exploring the relationship with performance. *Management and Organization Review*, 1, 247-269.
- Luthans, F., & Ibrayeva, E.S. (2006). Entrepreneurial self-efficacy in Central Asian transition economies: Quantitative and qualitative analyses. *Journal of International Business Studies*, 37, 92-110.
- Luthans, F., & Jensen, S.M. (2002). Hope: A new positive strength for human resource development. *Human Resource Development Review*, 1, 304-322.

- Luthans, F., Norman, S.M., Avolio, B.J., & Avey, J.B. (2008). The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior*, 28, 219-238.
- Luthans, F., & Peterson, S.J. (2002). Employee engagement and manager self-efficacy: Implications for managerial effectiveness and development. *Journal of Management Development*, 21, 376-387.
- Luthans, F., Vogelgesang, G.R., & Lester, P.B. (2006). Developing the psychological capital of resiliency. *Human Resource Development Review*, 5, 25-44.
- Luthans, F., & Youssef, C.M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*, 33, 143-160.
- Luthans, F., & Youssef, C.M. (2007). Emerging positive organizational behavior. *Journal of Management*, 33, 321-349.
- Luthans, F., Youssef, C.M., & Avolio, B.J. (2007a). *Psychological capital: Developing the human competitive edge*. Oxford: Oxford University Press.
- Luthans, F., Youssef, C.M., & Avolio, B.J. (2007b). Psychological capital: Investing and developing positive organizational behavior. In D.L. Nelson & C.L. Cooper (Eds.), *Positive organizational behavior* (pp. 9-24). Thousand Oaks, CA: Sage.
- Luthans, F., Zhu, W., & Avolio, B.J. (2006). The impact of efficacy on work attitudes across cultures. *Journal of World Business*, 41, 121-132.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131, 803-855.

- Lyubomirsky, S., Sheldon, K.M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*, 111-131.
- Lyubomirsky, S., Sousa, L., & Dickerhoof, R. (2006). The costs and benefits of writing, talking, and thinking about life's triumphs and defeats. *Journal of Personality and Social Psychology, 90*, 692-708.
- Maddux, J.E. (2002). Self-efficacy. In C.R. Snyder & S.J. Lopez (Eds.). *Handbook of Positive Psychology* (pp. 277-287). New York: Oxford University Press.
- Maddux, J.E. (2009). Self-efficacy. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 874-880). Oxford: Wiley-Blackwell.
- Magaletta, P.R., & Oliver, J.M. (1999). The hope construct, will, and ways: Their relations with efficacy, optimism, and general well-being. *Journal of Clinical Psychology, 55*, 539-551.
- Mallak, L. (1998). Putting organizational resilience to work. *Industrial Management, 40*, 8-14.
- Martin, S. (2002). Building resilience from the grassroots up. *Monitor on Psychology, 33*(11), 52-53.
- Maslow, A.H. (1954). *Motivation and personality*. New York: Harper.
- Mastekaasa, A. (1994). Marital status, distress, and well-being: An international comparison. *Journal of Comparative Family Studies, 25*, 183-205.
- Masten, A.S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M.C. Wang & E.W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 3-25). Hillsdale, NJ: Lawrence Erlbaum.

- Masten, A.S. (2001). Ordinary magic: Resilience process in development. *American Psychologist, 56*, 227-239.
- Masten, A.S., Cutuli, J.J., Herbers, J.E., & Reed, M.J. (2009). Resilience in development. In S.J. Lopez & C.R. Snyder (Eds.), *Oxford Handbook of Positive Psychology, 2nd Edition* (pp. 117-131). Oxford: Oxford University Press.
- Masten, A.S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B.B. Lahey & A.E. Kazdin (Eds.), *Advances in clinical child psychology, Vol. 8* (pp. 1-52). New York: Plenum Press.
- Masten, A.S., & Reed, M.J. (2002). Resilience in development. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology* (pp. 74-88). New York: Oxford University Press.
- Maurer, T.J., & Pierce, H.R. (1998). A comparison of Likert scale and traditional measures of self-efficacy. *Journal of Applied Psychology, 83*, 324-329.
- McNatt, D.B., & Judge, T.A. (2008). Self-efficacy intervention, job attitudes, and turnover: A field experiment with employees in role transition. *Human Relations, 61*, 783-810.
- Mehlman, R.C., & Snyder, C.R. (1985). Excuse theory: A test of the self-protective role of attributions. *Journal of Personality and Social Psychology, 49*, 994-1001.
- Murray, B. (2003). Rebounding from losses. *Monitor on Psychology, 34*(9), 42-43.
- Norman, S.M., Avolio, B.J., & Luthans, F. (in press). The impact of positivity and transparency on trust in leaders and their perceived effectiveness. *The Leadership Quarterly*.

- Norman, S., Luthans, B., & Luthans, K. (2005). The proposed contagion effect of hopeful leaders on the resiliency of employees and organizations. *Journal of Leadership and Organizational Studies, 12*, 55-64.
- O'Brien, K.M. (2003). Measuring career self-efficacy: Promoting confidence and happiness at work. In S.J. Lopez & C.R. Snyder (Eds.), *Positive Psychological Assessment: A Handbook of Models and Measures* (pp. 109-126). Washington, DC: American Psychological Association.
- Parker, S. (1998). Enhancing role-breadth self efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology, 83*, 835-852.
- Peterson, C. (2000). The future of optimism. *American Psychologist, 55*, 44-55.
- Peterson, C. (2006). *A primer in positive psychology*. Oxford: Oxford University Press.
- Peterson, C., & Chang, E.C. (2003). Optimism and flourishing. In C.L. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 55-79). Washington, DC: American Psychological Association.
- Peterson, C., & Seligman, M.E.P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review, 91*, 347-374.
- Peterson, C., & Steen, T.A. (2009). Optimistic explanatory style. In S.J. Lopez & C.R. Snyder (Eds.), *Oxford handbook of positive psychology, 2nd Edition* (pp. 313-321). Oxford: Oxford University Press.
- Peterson, R.A. (2000). *Constructing effective questionnaires*. Thousand Oaks, CA: Sage.
- Peterson, S.J., & Byron, K. (2007). Exploring the role of hope in job performance: Results from four studies. *Journal of Organizational Behavior, 28*, 785-803.

- Peterson, S.J., & Luthans, F. (2003). The positive impact and development of hopeful leaders. *Leadership and Organizational Development Journal*, 24, 26-31.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.
- Rand, K.L., & Cheavens, J.S. (2009). Hope theory. In S.J. Lopez & C.R. Snyder (Eds.), *Oxford Handbook of Positive Psychology, 2nd Edition* (pp. 323-333). Oxford: Oxford University Press.
- Rasmussen, H.N., Wrosch, C., Scheier, M.F., & Carver, C.S. (2006). Self-regulation processes and health: The importance of optimism and goal adjustment. *Journal of Personality*, 74, 1721-1747.
- Rath, T., & Clifton, D.O. (2005). *How full is your bucket? Positive strategies for work and life (Educator's edition)*. New York: Gallup Press.
- Reichard, R.J., & Avolio, B.J. (2005). Where are we? The stats of leadership intervention research: A meta-analytic summary. In W.L. Gardner, B.J. Avolio, & F.O. Walumbwa (Eds.), *Authentic leadership theory and practice: Origins, effects, and development: Vol. 3, Monographs in leadership and management* (pp. 203-222). New York: JAI Press.
- Reivich, K., & Gillham, J. (2003). Learned optimism: The measurement of explanatory style. In S.J. Lopez & C.R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 57-74). Washington, DC: American Psychological Association.

- Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, *147*, 598-611.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *22*, 323-356.
- Rutter, M., Maughan, N., Mortimore, P., & Ouston, J. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. Cambridge, MA: Harvard University Press.
- Ryff, C.D., & Singer, B.H. (1998). Contours of positive human health. *Psychological Inquiry*, *9*, 1-28.
- Ryff, C.D., & Singer, B. (2003). Flourishing under fire: Resilience as a prototype of challenged thriving. In C.L. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 15-36). Washington, DC: American Psychological Association.
- Sadri, G., & Robertson, I.T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology: An International Review*, *42*, 139-152.
- Schaufeli, W.B., Bakker, A.B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross national study. *Educational and Psychological Measurement*, *66*, 701-716.
- Scheier, M., & Carver, C. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, *4*, 219-247.

- Scheier, M., & Carver, C. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality*, *55*, 169-210.
- Scheier, M.F., & Carver, C.S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, *16*, 201-228.
- Scheier, M.F., & Carver, C.S. (2009). Optimism. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 656-663). Oxford: Wiley-Blackwell.
- Scheier, M.F., Carver, C.S., & Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*, 1063-1078.
- Schmidt, F.L., & Rader, M. (1999). Exploring the boundary conditions for interview validity: Meta-analytic validity findings for a new interview type. *Personnel Psychology*, *52*, 445-464.
- Schoenewolf, G. (1990). *Turning points in analytic therapy: The classic cases*. London: Jason Aronson Press.
- Scioli, A., Chamberlin, C., Samor, C.M., LaPointe, A.B., Campbell, T.L., MacLeod, A.R., & McLennon, J.A. (1997). A prospective study of hope, optimism, and health. *Psychological Reports*, *81*, 723-733.
- Seligman, M.E.P. (1998). *Learned optimism (2nd Edition)*. New York: Pocket Books.
- Seligman, M.E.P. (1999). The president's address. *American Psychologist*, *54*, 559-562.

- Seligman, M.E.P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14.
- Seligman, M.E.P., & Schulman, P. (1986). Explanatory style as a predictor of productivity and quitting among life insurance sales agents. *Journal of Personality and Social Psychology, 50*, 832-838.
- Seligman, M.E.P., Steen, T.A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410-421.
- Serwer, A, & Kowitt, B. (2009). The decade from Hell...and how the next one can be better. *Time, 174*(22), 30-38.
- Sheldon, K., & King, L. (2001). Why positive psychology is necessary. *American Psychologist, 56*, 216-217.
- Sheldon, K.M., & Lyubomirsky, S. (2006). Achieving sustainable gains in happiness: Change your actions, not your circumstances. *Journal of Happiness Studies, 7*, 55-86.
- Shifren, K., & Hooker, K. (1995). Stability and change in optimism: A study among spouse caregivers. *Experimental Aging Research, 21*, 59-76.
- Sin, N.L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology: In Session, 65*, 467-487.
- Snyder, C.R. (1989). Reality negotiation: From excuses to hope and beyond. *Journal of Clinical and Social Psychology, 8*, 130-157.

- Snyder, C.R. (1994). *The psychology of hope: You can get there from here*. New York: Free Press.
- Snyder, C.R. (1995). Managing for high hope. *R&D Innovator*, 4(6), 6-7.
- Snyder, C.R. (2000). *Handbook of hope*. San Diego, CA: Academic Press.
- Snyder, C.R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13, 249-275.
- Snyder, C.R., Harris, C., Anderson, J.R., Holleran, S.A., Irving, L.M., Sigmon, S.T., Yoshinoubu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60, 570-585.
- Snyder, C.R., Irving, L., & Anderson, J. (1991). Hope and health: Measuring the will and the ways. In C.R. Snyder & D.R. Forsyth (Eds.), *Handbook of social and clinical psychology* (pp. 285-305). Elmsford, NY: Pergamon.
- Snyder, C.R., & Lopez, S.J. (2002). *Handbook of Positive Psychology*. New York: Oxford University Press.
- Snyder, C.R., Rand, K.L., & Sigmon, D.R. (2002). Hope theory. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 257-276). New York: Oxford University Press.
- Snyder, C.R., Sympson, S.C., Ybasco, F.C., Borders, T.F., Babyak, M.A., & Higgins, R.L. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, 70, 321-335.
- Stajkovic, A.D. (2006). Development of a core confidence – higher order construct. *Journal of Applied Psychology*, 91, 1208-1224.

- Stajkovic, A.D., & Luthans, F. (1998a). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, *124*, 240-261.
- Stajkovic, A.D., & Luthans, F. (1998b). Social cognitive theory and self-efficacy: Going beyond traditional motivational and behavioral approaches. *Organizational Dynamics*, *26*, 62-74.
- Stanton, J.M., Sinar, E.F., Balzer, W.K., & Smith, P.C. (2002). Issues and strategies for reducing the length of self report scales. *Personnel Psychology*, *55*, 167-194.
- Staudinger, U.M., Marsiske, M., & Baltes, P.B. (1993). Resilience and levels of reserve capacity in later adulthood: Perspectives from life-span theory. *Development and Psychopathology*, *5*, 541-566.
- Staw, B.M., Sutton, R.I., & Pelled, L.H. (1994). Employee positive emotion and favorable outcomes at the workplace. *Organization Science*, *5*, 51-71.
- Stewart, M., Reid, G., & Mangham, C. (1997). Fostering children's resilience. *Journal of Pediatric Nursing*, *12*, 21-31.
- Sutcliffe, K.M., & Vogus, T.J. (2003). Organizing for resilience. In K.S. Cameron, J.E. Dutton, & R.E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 94-110). San Francisco, CA: Berrett-Koehler.
- Sy, T., Cote, S., & Saavedra, R. (2005). The contagious leader: Impact of the leader's mood on the mood of group members, group affective tone, and group processes. *Journal of Applied Psychology*, *90*, 295-305.
- Taylor, S.E., Kemeny, M.E., Aspinwall, L.G., Schneider, S.G., Rodriguez, R., & Herbert, M. (1992). Optimism, coping, psychological distress, and high-risk sexual

- behavior among men at risk for acquired immunodeficiency syndrome (AIDS).
Journal of Personality and Social Psychology, 63, 460-473.
- Tennen, H., & Affleck, G. (1998). Personality and transformation in the face of adversity. In R.G. Tedeschi, C.L. Park, & L.G. Calhoun (Eds.), *Posttraumatic growth: Postive changes in the aftermath of crisis* (pp. 65-98). Mahwah, NJ: Erlbaum.
- Tierney, P., & Farmer, S. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45, 1137-1148.
- Tkach, C., & Lyubomirsky, S. (2006). How do people pursue happiness?: Relating personality, happiness-increasing strategies, and well-being. *Journal of Happiness Studies*, 7, 183-225.
- Tourangeau, R., Rips, L.J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge, England: Cambridge University Press.
- Tugade, M.M., & Fredrickson, B.L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86, 320-333.
- Tugade, M.M., & Fredrickson, B.L. (2007). Regulation of positive emotions: Emotion regulation strategies that promote resilience. *Journal of Happiness Studies*, 8, 311-333.
- Valliant, G.E. (2000). Adaptive mental mechanisms: Their role in a positive psychology. *American Psychologist*, 55, 89-98.
- Wagner, R., & Harter, J.K. (2006). *12: The elements of great managing*. New York: Gallup Press.

- Wagnild, G.M., & Young, H.M. (1993). Development and psychometric evaluation of the resiliency scale. *Journal of Nursing Management, 1*, 165-178.
- Waite, P., & Richardson, G. (2004). Determining the efficacy of resiliency training in the work site. *Journal of Allied Health, 33*, 178-183.
- Werner, E.E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Development and Psychopathology, 5*, 503-515.
- Werner, E.E. (1995). Resilience in development. *Current Directions in Psychological Science, 4*, 81-85.
- Wood, R.E., & Locke, E.A. (1987). The relation of self-efficacy and grade goals to academic performance. *Educational and Psychological Measurement, 47*, 1013-1024.
- Wright, T.A. (2003). Positive organizational behavior: An idea whose time has truly come. *Journal of Organizational Behavior, 24*, 437-442.
- Wright, T.A., Cropanzano, R., Denney, P.J., & Moline, G.L. (2002). When a happy worker is a productive worker: A preliminary examination of three models. *Canadian Journal of Behavioural Science, 34*(3), 146-150.
- Yates, T.M., & Masten, A.S. (2004). Fostering the future: Resilience theory and the practice of positive psychology. In P.A. Linley & S.J. Joseph (Eds.), *Positive psychology in practice* (pp. 521-539). Hoboken, NJ: Wiley.
- Youssef, C.M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The impact of hope, optimism, and resilience. *Journal of Management, 33*, 774-800.

- Youssef, C.M., & Luthans, F. (2009). Positive organizational behavior. In S.J. Lopez (Ed.), *The encyclopedia of positive psychology* (pp. 733-737). Oxford: Wiley-Blackwell.
- Youssef, C.M., & Luthans, F. (2010). An integrated model of psychological capital in the workplace. In P.A. Linley, S. Harrington, & N. Garcea (Eds.), *Oxford handbook of positive psychology and work* (pp. 277-288). Oxford: Oxford University Press.
- Zunz, S. (1998). Resiliency and burnout: Protective factors for human service managers. *Administration in Social Work, 22*, 39-54.
- Zurcher, L.A. (1982). The staging of emotion: A dramaturgical analysis. *Symbolic Interaction, 5*, 1-22.

Table 1: Demographics of the Sample

	Variable	Percent	Mean	Standard Deviation
Total Sample	Male	25.9%		
	Female	74.1%		
	Tenure (years)		5.31	4.87
	Age (years)		39.43	11.49
Managers	Male	37.3%		
	Female	62.7%		
	Tenure (years)		7.02	5.83
	Age (years)		42.88	9.87
Associates	Male	22.8%		
	Female	77.2%		
	Tenure (years)		4.83	4.46
	Age (years)		38.45	11.74

Table 2: Scale Reliability Estimates

Scale	# of Items	Cronbach's α (pre-test)	Cronbach's α (post-test)
PsyCap	24	.91	.90
Employee Engagement	12	.88	.87
Performance (self-rated)	5	.92	.84
Performance (mgr-rated)	5	.96	.95

Table 3: Pre-Test and Post-Test Descriptive Statistics

Manager Sample	Group	Pre-test n	Pre-test mean	Pre-test Std. Dev.	Post-test n	Post-test mean	Post-test Std. Dev.
PsyCap	control	48	5.12	0.57	44	5.19	0.60
	treatment	56	5.33	0.52	51	5.35	0.42
Employee Engagement	control	48	4.11	0.60	44	4.20	0.61
	treatment	56	4.29	0.61	51	4.31	0.64
Performance (self-rated)	control	48	8.06	0.73	44	8.08	0.90
	treatment	56	8.29	0.55	51	8.24	0.66
Performance (mgr-rated)	control	43	7.60	1.03	43	7.91	0.74
	treatment	51	8.09	0.82	51	8.02	0.80

Associate Sample	Group	Pre-test n	Pre-test mean	Pre-test Std. Dev.	Post-test n	Post-test mean	Post-test Std. Dev.
PsyCap	control	121	5.00	0.47	116	4.97	0.51
	treatment	172	5.08	0.51	163	5.10	0.50
Employee Engagement	control	121	4.18	0.57	116	4.26	0.53
	treatment	171	4.27	0.60	160	4.31	0.59
Performance (self-rated)	control	123	8.19	0.61	121	8.22	0.60
	treatment	181	8.29	0.71	174	8.34	0.61
Performance (mgr-rated)	control	123	7.19	1.52	111	7.46	1.10
	treatment	236	7.44	1.22	226	7.57	1.16

Table 4: ANOVA Controlling for Group (Control or Treatment)

Manager Sample		F	Sig.
PsyCap	pre-test	3.73	0.056
	post-test	2.29	0.134
Employee Engagement	pre-test	2.15	0.154
	post-test	0.80	0.373
Performance (self-rated)	pre-test	3.19	0.077
	post-test	0.91	0.343
Performance (mgr-rated)	pre-test	6.64	<i>0.012 *</i>
	post-test	0.53	0.470

Associate Sample		F	Sig.
PsyCap	pre-test	2.46	0.118
	post-test	4.43	<i>0.036 *</i>
Employee Engagement	pre-test	1.67	0.198
	post-test	0.52	0.470
Performance (self-rated)	pre-test	1.67	0.198
	post-test	2.84	0.093
Performance (mgr-rated)	pre-test	2.89	0.090
	post-test	0.67	0.415

Table 5: Variable Means and Bivariate Correlations

Variable	Mean	SD	1	2	3	4	5
1. Age	39.43	11.49					
2. Tenure (years)	5.31	4.87	.43				
3. PsyCap	5.10	.51	.03	-.02			
4. Employee Engagement	4.23	.59	.01	-.09	.51		
5. Performance (self-rated)	8.23	.67	.02	.07	.44	.23	
6. Performance (mgr-rated)	7.46	1.28	-.01	-.03	.15	.20	.06

Note. Correlations greater than .10, $p < .05$; greater than .13, $p < .01$

Figure 1: Theoretical Model: Contagion Effect

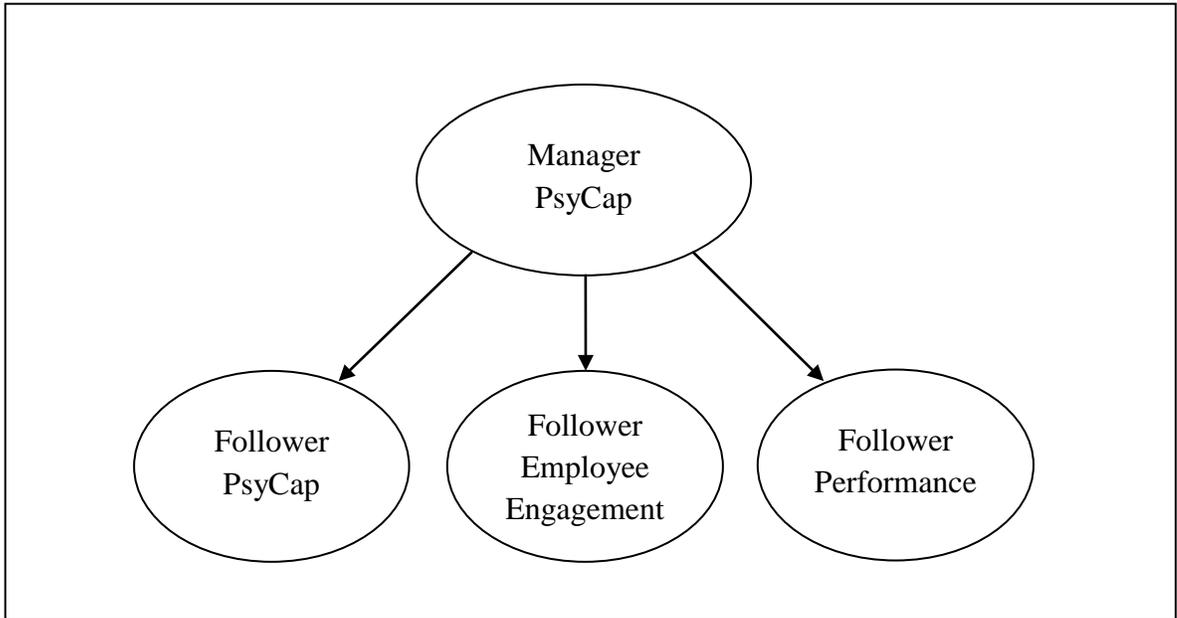
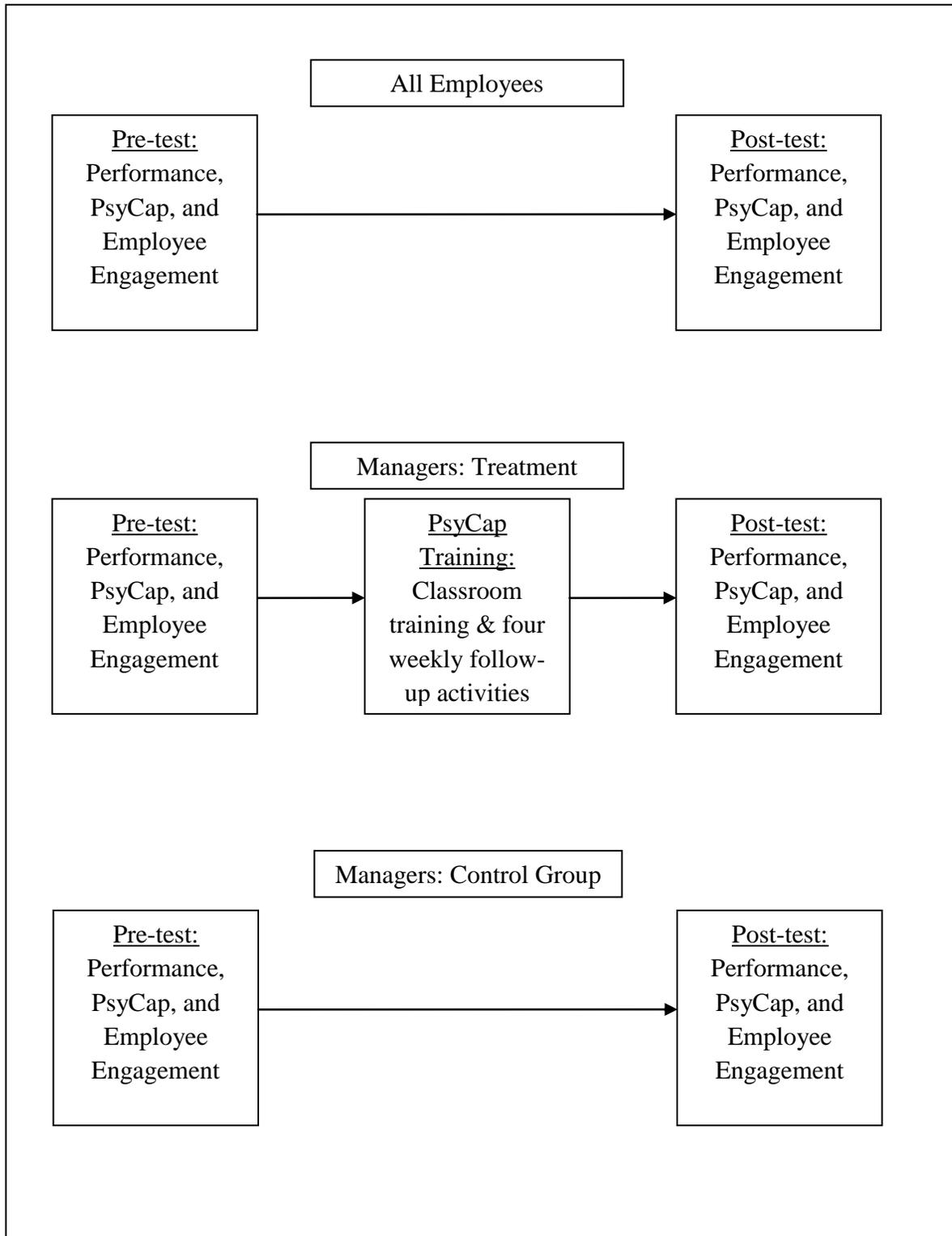


Figure 2: Research Design Model



APPENDIX A: SURVEY INSTRUMENTATION

Employee Performance Measure (manager rating version)

Below are statements that ask you to evaluate the current work performance of each of the employees that you directly supervise. Use the scale provided to answer each question.

1. All in all, how competently does this individual perform their job? (1-9 scale, not at all competently to very competently)
2. In your estimation, how effectively does this individual get their work done? (1-9 scale, not at all effectively to very effectively)
3. How would you judge the overall quality of this individual's work? (1-9 scale, very low quality to very high quality)
4. How would you judge the overall perceived competence of this individual? (1-9 scale, not at all competent to very competent)
5. How would you judge the overall quantity of this individual's work? (1-9 scale, very low quantity to very high quantity)

Adapted from Heilman, M.E., Block, C.J., & Lucas, J.A. (1992). Presumed incompetence? Stigmatization and affirmative action efforts. *Journal of Applied Psychology, 77*, 536-544.

Employee Performance Measure (self-report version)

Below are statements that ask you to evaluate your work performance right now. Use the scale provided to answer each question.

1. All in all, how competently do you perform your job? (1-9 scale, not at all competently to very competently)
2. In your estimation, how effectively do you get your work done? (1-9 scale, not at all effectively to very effectively)
3. How would you judge the overall quality of your work? (1-9 scale, very low quality to very high quality)
4. How would you judge your overall perceived competence? (1-9 scale, not at all competent to very competent)
5. How would you judge the overall quantity of your work? (1-9 scale, very low quantity to very high quantity)

Adapted from Heilman, M.E., Block, C.J., & Lucas, J.A. (1992). Presumed incompetence? Stigmatization and affirmative action efforts. *Journal of Applied Psychology*, 77, 536-544.

PsyCap Questionnaire (PCQ)

Below are statements that describe how you may think about yourself right now. Use the following scale to indicate your level of agreement or disagreement with each statement. (1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree)

1. I feel confident analyzing a long-term problem to find a solution.
2. I feel confident representing my work area in meetings with management.
3. I feel confident contributing to discussions about the company's strategy.
4. I feel confident helping to set targets/goals in my work area.

5. I feel confident contacting people outside the company (e.g. , suppliers, customers) to discuss problems.
6. I feel confident presenting information to a group of colleagues.
7. If I should find myself in a jam at work, I could think of many ways to get out of it.
8. At the present time, I am energetically pursuing my work goals.
9. There are lots of ways around any problem.
10. Right now I see myself as being pretty successful at work.
11. I can think of many ways to reach my current work goals.
12. At this time, I am meeting the work goals that I have set for myself.
13. When I have a setback at work, I have trouble recovering from it, moving on. (R)
14. I usually manage difficulties one way or another at work.
15. I can be “on my own,” so to speak, at work if I have to.
16. I usually take stressful things at work in stride.
17. I can get through difficult times at work because I’ve experienced difficulty before.
18. I feel I can handle many things at a time at this job.
19. When things are uncertain for me at work, I usually expect the best.
20. If something can go wrong for me work-wise, it will. (R)
21. I always look on the bright side of things regarding my job.
22. I’m optimistic about what will happen to me in the future as it pertains to work.
23. In this job, things never work out the way I want them to. (R)
24. I approach this job as if “every cloud has a silver lining.”

Source: Luthans, F., Avolio, B., Avey, J., & Norman, S. (2007). Psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60, 541-572. Items adapted from Parker, 1998; Snyder, et al., 1996; Wagnild & Young, 1993; Scheier & Carver, 1985.

Note: R indicates reverse scoring.

Employee Engagement

Please answer the following questions using the scales provided.

- a. On a five-point scale, where “5” is extremely satisfied and “1” is extremely dissatisfied, how satisfied are you with (Name of Company) as a place to work?

Use the following scale to indicate your level of agreement or disagreement with each statement.

(1 = strongly disagree, 5 = strongly agree, 6=don't know/does not apply)

1. I know what is expected of me at work.
2. I have the materials and equipment I need to do my work right.
3. At work, I have the opportunity to do what I do best every day.
4. In the last seven days, I have received recognition or praise for doing good work.
5. My supervisor, or someone at work, seems to care about me as a person.
6. There is someone at work who encourages my development.
7. At work, my opinions seem to count.
8. The mission or purpose of my company makes me feel my job is important.
9. My associates or fellow employees are committed to doing quality work.
10. I have a best friend at work.

11. In the last six months, someone at work has talked to me about my progress.

12. This last year, I have had opportunities at work to learn and grow.

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Source: Buckingham, M. & Coffman, C. (1999). *First, break all the rules: What the world's greatest managers do differently*. New York: Simon & Schuster.

Note: For items 1-12, the sixth response option – don't know/does not apply – is unscored.