

Examining Psychological Capital as a Predictor of Ethical Leadership

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by M. Katharine Berlinguette

**Abstract**

It has been several years since Brown and Trevino (2006) offered the opinion that the field of ethical leadership was still uncharted territory; knowing how leaders ought to behave is well explored but understanding how we can predict ethical leadership is uncultivated. This research investigated psychological capital as a predictor of ethical leadership. Study 1 ( $N = 440$ ) examined the structure and model fit of the psychological capital scale using confirmatory factor analysis. The four-factor model resulted in an equal but more parsimonious fit of data as compared to a second order factor ( $X^2_{\text{robust}}(246, N=440) = 542.21$ ,  $CFI = .90$ ,  $RMSEA = .05$  CI [.05-.06]). Study 2 ( $N = 47$ ) a combined data set of matched leaders and followers were used to examine the relationship between self-evaluated leader psychological capital and follower evaluated ethical leadership. Hope, as measured by psychological capital, uniquely accounted for 7% of the variance when controlling for age and gender ( $b = .39$ ,  $SE = .20$ ,  $B = .52$ ,  $t = 2.00$ ,  $p = .05$ ).

Keywords: Psychological Capital, Ethical Leadership, Hope, Self-Efficacy, Resiliency, Optimism

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**Table of Contents**

Acknowledgements.....	ii
Abstract.....	iii
Table of Contents.....	iv
List of Appendices.....	vi
List of Tables.....	vii
List of Figures.....	viii
Introduction.....	1
Ethical Leadership.....	3
Psychological Capital.....	9
Psychological Capital and Ethical Leadership.....	14
Method.....	17
Study One.....	17
Study Two.....	22
Analyses and Results.....	26
Study One.....	26
Study Two.....	33
Discussion.....	42
Study One.....	42
Study Two.....	43
Limitations.....	48
Future Directions.....	49

PSYCAP AND ETHICAL LEADERSHIP	v
Conclusion .....	50
References.....	52
Appendices.....	51

**List of Appendices**

A. Demographic Questions for All Participants.....64

B. Psychological Capital Scale.....71

C. Ethical Leadership Scale for Followers.....73

D. Copyright Permission for Use of Four Items from the Psychological Capital Scale.....74

**List of Tables**

1.	Correlations for Study One.....	28
2.	Results of Competing Models Confirmatory Factor Analysis.....	33
3.	Correlations for Age, Number of Subordinates, Organizational Tenure, and Position Tenure.....	36
4.	T-tests for Gender.....	37
5.	ANOVAs for Education.....	38
6.	ANOVASs for Occupation.....	39
7.	Regressions Examining the Psychological Capital/Ethical Leadership Relationship.....	41

**List of Figures**

1. Results of One-Factor Confirmatory Factor Analysis.....29
2. Results of Four-Factor Confirmatory Factor Analysis.....31
3. Results of Second-Order Factor Confirmatory Factor Analysis.....32



### Examining Psychological Capital as a Predictor of Ethical Leadership

Recent examples in the media highlight cases of individuals and corporations acting in unethical ways. Athletes cheating in sporting events or corporations bilking employees out of their retirement funds are examples of breaches of ethical conduct, but it is not limited to the private sector. Recently, Canadian public figures have also been embroiled in controversy about their lack of ethical behaviour in regards to excessive spending, making false claims, questionable personal behaviour, and outright lying. Although unethical behaviour occurs at many levels, the media often highlights the misdeeds of those in leadership positions. One dramatic example was turned into the recent blockbuster movie, *The Wolf of Wall Street*, which tells the based-on-real-life story of how Jordan Belfort manipulated systems and people for financial gain,

“When I have to face young people, I want them to understand how slowly, in incremental steps, you start to lose your ethics. It’s not all at once.”...“I’m the poster child for what happens when you lose your ethics and integrity,” Mr. Belfort says. “I had a gift for selling and persuasion and teaching others to sell, and I blew it. ... I understand now that success in the absence of ethics and integrity isn’t success. It’s failure. And I was the world’s most successful failure in that regard.” (The Globe and Mail, 13 April 2014).

Generally, we hold our leaders to a higher ethical standard. Not only because they should behave ethically, but also because they set the tone for the work environment. Individually, an absence of ethical leadership offends our sense of justice and fair play,

and it is not the behaviour we expect of our elected officials. From a business perspective, we care because it impacts both individual and organizational effectiveness, safety behaviours, public trust, and ultimately the bottom line.

Research (e.g., Schminke, Ambrose, & Neubaum, 2005) suggests that the most important factor in shaping the ethical climate of an organization may be its leaders. Ethical leaders have been found to influence group-level deviance (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009), subordinate optimism (De Hoogh & Den Hartog, 2008), employee motivation (Piccolo, Greenbaum, Den Hartog, & Folger, 2010), and follower trust and commitment (Den Hartog & De Hoogh, 2009; Hassan, Mahsud, Yukl, & Prussia, 2013). For the leaders themselves, ethical leadership is related to both self-efficacy and job performance (Walumbwa et al., 2011).

To date, little research has focused on investigating predictors of ethical leadership (Brown, Treviño, & Harrison, 2005; Brown & Treviño, 2013; Jordan, Brown, Treviño, & Finkelstein, 2013; Kalshoven, Den Hartog, & De Hoogh, 2011) such as, psychological capital, which is a combination of an individual's self-perceptions of hope, self-efficacy, resiliency, and optimism. The power of influence that ethical leaders have underscores the value and importance of selecting, promoting, and retaining employees who lead ethically. Psychological capital may be a valuable measure to use in that process. The purpose of this research is to (1) confirm the factor structure of the four-component structure of psychological capital, and (2) investigate psychological capital as a predictor of ethical leadership.

### **Ethical Leadership**

Ethical leadership is defined as,

“...the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making” (Brown et al., 2005).

Theorized in the context of social learning (Bandura, 1977: SLT) ethical leadership proposes that followers learn by observing the leader and co-workers (Brown & Treviño, 2006; Mayer, Kuenzi, et al., 2009). In order for a leader to be someone who followers want to emulate, the leader must be perceived as being trustworthy, credible, having self-efficacy, and being attractive (Bandura, 1977). Ethical leaders are perceived as role-model worthy, in part, because they can distribute rewards and punishments in a legitimate way, including those for the ethical or unethical behaviour of their followers (Brown & Treviño, 2006).

In their research to develop the concept of ethical leadership, Brown and colleagues (2005) conducted a series of studies to define and refine their measure of ethical leadership. Following Hinkin's (1998), summary of recommendations for the development of research items, and built on their working definition of ethical leadership (Treviño, Brown, & Hartman, 2003), a pool of 48 items based on existing theory and research (e.g. Bass, 1985; Treviño et al., 2003) was initially proposed. Next, 20 MBA candidates with prior work experience provided descriptions, including behaviours and traits, of a previous supervisor whom they considered to be an ethical leader to see if any

additional items could be identified, none were. Study one ( $N = 154$  MBA students) consisted of scale reduction and study two ( $N = 127$  financial services employees) was an exploratory factor analysis of the 10 items remaining after study one, resulting in a one-factor solution in both studies. Study three ( $N = 184$  financial services employees – separate sample from study two) was a confirmatory factor analysis of the new measure, which resulted in support for a one-dimensional model, while study four ( $N = 20$  faculty and doctoral students in industrial/organizational psychology and management departments) consisted of 20 expert judges (industrial/organizational psychology and management faculty and doctoral students) to evaluate the content of the items; judges found the ten items to be strongly representative of ethical leadership. Studies five ( $N = 87$  MBA students; examination of the relationship with consideration) and six ( $N = 123$  senior undergraduate students; examination of the relationship with idealized influence) were an examination of scale validity including confirmatory factor analysis of the 10-item scale and assessment of the discriminant and convergent validity; both studies supported a two-factor model. This suggests that although there is overlap between ethical leadership and both idealized influence and consideration, neither can be used as a substitute measure for ethical leadership. Study seven ( $N = 1055$  financial services employees broken into three sub-samples) was an evaluation of the incremental improvement of prediction of ethical leadership over the idealized influence sub-scale of transformational leadership.

Recent research by Jordan and colleagues (2013) found divergent cognitive moral development between a follower and leader could increase perceptions of ethical

leadership if it is the leader, rather than the follower, with higher levels of cognitive moral development. Additionally, the lowest follower evaluations of their leaders ethical leadership were when leader and follower had similar moderate levels of cognitive moral development. As observational learning by followers continues, followers may be able to improve their own cognitive moral development. They could result in improved ethical behaviours of followers. Furthermore, when leader and follower moral development are similar, reduced turnover intentions and improved job satisfaction may be found with followers (Schminke et al., 2005).

**Ethical Leadership and Transformational Leadership.** Treviño, Brown and Hartman (2003) describe ethical leadership as one of the cornerstones of transformational leadership, particularly idealized influence, which Avolio (1999) defines as consisting of three key parts: being a role model to others, demonstrating high moral and ethical standards, and consistently doing the right thing. This definition has many similarities to Brown and colleagues' (2005) definition of ethical leadership, suggesting that transformational leadership may be linked to ethical leadership in a very direct way. Indeed, Turner, Barling, Epitropaki, Butcher, and Milner (2002) found that higher levels of moral reasoning related to increased transformational leadership behaviours. Toor and Ofori (2009) demonstrated a positive link between ethical leadership and both transformational leadership and idealized influence. In fact, transformational leadership predicted ethical leadership (Toor & Ofori, 2009). This has also been supported by research (Mayer, Aquino, Greenbaum, & Kuenzi, 2012) which indicates a strong correlation between ethical leadership and idealized influence. However, ethical

leadership is not the same as transformational leadership. Although overlaps of personal characteristics exist, the two forms of leadership are different (Brown et al., 2005; Treviño et al., 2003). Brown and colleagues (2005) found that ethical leadership demonstrated incremental validity of follower outcomes (dedication and job satisfaction) and perceptions of leaders (effectiveness, trust, and interactional justice) over and above transformational leadership.

**Ethical Leadership and Ethical Behaviour of Followers.** Brown and Treviño (2006) describe ethical leadership as having two aspects: the moral person, which speaks to an individual's character, motivations, and personal traits, and the moral manager, which speaks to how leaders make ethics a clear part of their leadership through role modeling, proactive ethical influence, and holding followers responsible for their ethical/unethical behaviours and actions. It is this second part of the description that differentiates the ethical leader from the ethical person, and ethical leadership from ethical behaviour. An ethical leader is both a moral person and a moral manager.

Ethical leaders are of tremendous importance in the workplace because they influence those around them. Brown and colleagues (2005) state that ethical leaders use both transactional and transformational leadership, have honesty and integrity, are trustworthy, and treat people with both fairness and consideration. The ethical leader not only demonstrates ethical behaviours, but also expects and promotes these behaviours among followers. Ethical leadership has been found to predict follower outcomes such as dedication, and job satisfaction as well as perceived leader effectiveness (Brown et al., 2005). Furthermore, ethical leadership can predict a followers' inclination to report

problems to higher levels of management (Brown et al., 2005), which is important not only for day-to-day operations, but in addressing issues involving safety. Additionally, recent research has found that ethical leadership promotes organizational citizenship behaviours (Mayer et al., 2012; Piccolo et al., 2010), gives followers voice through improved psychological safety (Brown et al., 2005; Mayer, Greenbaum, Kuenzi, & Shteynberg, 2009; Walumbwa & Schaubroeck, 2009), increases follower autonomy (Piccolo et al., 2010), and reduces organizational deviance (Mayer, Kuenzi, et al., 2009). Given the number of important outcomes of ethical leadership it is critical that we have a comprehensive understanding of what it is, how it works, and importantly the predictors of ethical leadership.

**Existing Research on the Predictors of Ethical Leadership.** In 2006, Brown and Treviño offered the opinion that the field of ethical leadership was a still uncharted territory. Knowing what leaders ‘ought to’ do is well explored, but understanding predictors of ethical leadership is uncultivated. Our understanding of the predictors of ethical leadership is in early bloom.

**Personality.** Walumbwa & Schaubroeck (2009) examined three personality facets and found that the dimensions of conscientiousness and agreeableness were related to ethical leadership; they had predicted a relationship with neuroticism that was not found. Building on this work, Kalshoven and colleagues (2011) also considered personality dimensions as a predictor of ethical leadership. In contrast to Walumbwa and Schaubroeck (2009), they controlled for the two remaining personality dimensions, extroversion and openness. Kalshoven and colleagues (2011) found that the personality

dimensions of agreeableness and conscientiousness related more consistently to ethical leadership than the remaining three dimensions, but similar to the work of Walumbwa and Schaubroeck (2009), they did not find a strong relationship with neuroticism.

However, neuroticism was related to ethical leadership when Kalshoven and colleagues (2011) controlled for the influence of the leader-follower relationship as measured by Leader-Member-Exchange (LMX).

***Moral Identity.*** Mayer and colleagues (2012) considered whether or not moral identity (self-perceived compassion, consideration, and honesty) was a precursor to ethical leadership and examined the relationship by looking at how responsive leaders were to their followers. In this study, leaders self-evaluated moral identity and followers evaluated the leaders' ethical leadership. Mayer and colleagues (2012) found that leaders can be motivated by their moral identity and that this moral identity encouraged leaders to act in an ethical way that fit with their self-perception.

***Prior Exposure to an Ethical Leader.*** Using leaders at the managerial level ( $N = 217$ ) and followers ( $N = 659$ ) who reported directly to them, Brown and Treviño (2013) found that leaders who had previously had an ethical role model in their career were more likely to be assessed by their current subordinates as being ethical leaders. This is of particular interest because it supports the foundational SLT (Bandura, 1977) approach common to both ethical leadership and, as will be discussed in the next section, psychological capital.



We still do not fully understand what predicts ethical leadership (Jordan et al., 2013). One construct of value that may be useful in determining ones propensity to be an ethical leader is psychological capital.

### **Psychological Capital**

At the turn of the millennium, there was resurgence in the interest of positive psychology and a shift of focus to human flourishing as a result of Seligman and Csikszentmihalyi's (2000) seminal paper.

Luthans (2002a, 2002b), building on the ideas presented in Seligman and Csikszentmihalyi's (2000) influential work, proposed the idea of Positive Organizational Behaviour (POB), which 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). In order to be considered a part of POB, three key criteria were established. First, the proposed positive construct must have theoretical support backed by research and valid measurement. Secondly, the construct must be malleable, or 'state-like', rather than fixed or 'trait-like'. Finally, the construct must be an actual performance difference, as opposed to popular positive psychology and self-help literature (Luthans & Avolio, 2009; Luthans & Youssef, 2007; Luthans, 2002a, 2002b). Taking this perspective, and combining it with the resource-based theory of a firm (Barney, Wright, & Ketchen, 2001; Barney, 1991), Luthans (2002a, 2002b) proposed psychological capital as a construct that could be measured, developed, and managed, so it could be used as a source of competitive advantage for an organization.

**Differentiating Psychological Capital from other forms of Capital.**

Traditionally, organizations have used varied means of gaining competitive advantage. The use of traditional capital (financial/technological/structural/physical) and social capital (norms, values, and networks) are well established. However, in the past 50 years there has been a move towards greater investment in the employees of an organization. Human capital consists of the Knowledge, Skills, Abilities, and Other factors (KSAOs) that employees bring to an organization in addition to organization-specific knowledge that employees acquire over tenure with the organization (Luthans & Youssef, 2004). Unlike any of these other forms of capital, which may be used for sustainable competitive advantage, Luthans and Youssef (2004) argued that only psychological capital could meet the five key criteria of being long-term, unique, cumulative, interconnected and renewable.

Psychological Capital is defined as:

“...an individual’s positive psychological state of development that is characterized by the following: (a) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (b) making a positive attribution (optimism) about succeeding now and in the future; (c) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (d) when beset by problems and adversity, sustain and bouncing back and even beyond (resiliency) to attain success” (Luthans, Youssef, & Avolio, 2007, p.3).

**Hope.** As defined by Snyder and colleagues (1991), hope consists of both willpower and waypower; the ability to see the path forward and the commitment to work towards it. A recent meta-analysis found that hope was positively related to employee well-being (organizational commitment, job satisfaction, and health and well-being) and work performance (employee self-ratings of performance, supervisor-rated performance and objective performance), as well as being negatively related to stress and burnout (Reichard, Avey, Lopez, & Dollwet, 2013). Luthans, Youssef and colleagues (2007) found good internal consistency for the 6-item hope scale used in Psychological Capital with Cronbach alpha coefficients ranging from .72 - .80. Notably for psychological capital, hope has been found to be trainable in a short (90-minute) intervention with college students (Feldman & Dreher, 2012). This suggests that hope is malleable, as proposed by Luthans, Youssef and colleagues (2007) and supported by the meta-analysis of Reichard and colleagues (2013). Hope should be a predictor of ethical leadership because having both the ability to see the way forward, and the motivation to work towards the goal are central to many forms of leadership.

**Self-Efficacy.** Self-efficacy, as defined by Bandura (1982) is the belief in how well one can handle situations and circumstances. Self-efficacy has been related to a number of work-related outcomes, such as workplace performance (Stajkovic & Luthans, 1998), increased persistence and grades (Lent, Brown, & Larkin, 1987), and improved motivation (Bandura & Locke, 2003). Luthans, Avolio, Avey, and Norman (2007) found good internal consistency for the 6-item self-efficacy scale used in Psychological Capital with Cronbach alpha coefficients ranging from .75 - .85. Luthans, Youssef, and Avolio

(2007) describe people with high self-efficacy as possessing five characteristics: they have high levels of self-motivation, they thrive on challenge, they set high goals for themselves and often choose difficult tasks, they invest effort into accomplishing goals, and they persevere in the face of obstacles. Self-efficacy should be associated with ethical leadership because of the component of appropriate conduct in ethical leadership and the confident competence that results of self-efficacy.

**Resiliency.** Resiliency is not simply recovery, but the ability to bounce-back from adversity (Luthans, 2002b). Resiliency has been linked to reduced perceived stress and increased positive affect (Smith, Tooley, Christopher, & Kay, 2010), resilience under hardship (Costanzo, Ryff, & Singer, 2009), as well as both organizational success and effective leadership (Harland, Harrison, Jones, & Reiter-Palmon, 2005). Bartone, Roland, Picano, and Williams (2008) found that US Army Special Forces candidates with increased resilience were more successful in Special Forces training. Luthans and colleagues (Luthans, Avolio, et al., 2007) found adequate internal consistency for the 6-item resiliency scale used in Psychological Capital with Cronbach alpha coefficients ranging from .66 - .72. All leaders face adversity at some point. The resiliency component of psychological capital should be linked to ethical leadership because of the desire of ethical leaders to overcome adversity themselves, and to promote the ability to bounce back in their followers.

**Optimism.** Optimism, as presented by Seligman and Csikszentmihalyi (2000), is a human strength reflecting our perception about the future. Optimism is a global phenomena (Gallagher, Lopez, & Pressman, 2012), which has been found to predict well-

being (Gallagher et al., 2012; Magaletta & Oliver, 1999), be a better predictor of hedonic well-being than hope (Gallagher & Lopez, 2009) and is more strongly related to social well-being than hope (Gallagher & Lopez, 2009). Employee characteristics, such as optimism, are related to higher job performance (Ramlall, 2008). However, optimism has not been as effective as hope at predicting academic success (Rand, Martin, & Shea, 2011; Rand, 2009). Luthans and colleagues (Luthans, Avolio, et al., 2007) found adequate internal consistency for the 6-item hope scale used in Psychological Capital with Cronbach alpha coefficients ranging from .69 - .79. Optimism should be affiliated with ethical leadership because ethical leaders are concerned for the wellbeing of their followers, demonstrating both consideration and fairness, and having a positive outlook towards the future results higher job performance

As a unitary concept, psychological capital has been predictive of a number of organizational and individual level outcomes. Larson and Luthans (2006) compared the four individual constructs of hope, self-efficacy, resilience, and optimism to a combined measure of the four (psychological capital) and found that psychological capital was more predictive of employee commitment and job satisfaction than self-efficacy, resilience, or optimism as individual constructs ( $N = 74$ ). Additionally, Larson and Luthans (2006) also found that psychological capital was more predictive of job satisfaction when compared to either social or human capital. Similarly, Luthans, Avolio, Avey, and Norman (2007) compared the four individual constructs to a combined measure of psychological capital resulting in psychological capital being more predictive of performance and job satisfaction than the individual constructs.

**Individual Dimensions or a Single Construct.** There has been debate about whether psychological capital is a single construct comprising four dimensions or if it is four individual constructs. Luthans, Avolio, Walumbwa, and Li (2005) compared hope, resiliency, and optimism separately to a combined measure of the three and found that the combined measure was more positively related to relative merit-based salary. However, this study compared only three of the four aspects of psychological capital. Luthans, Avolio, Avey, and Norman (2007) found that as a composite, psychological capital was a better predictor of satisfaction and performance compared with four individual constructs. Both of these findings imply there are synergistic effects of these individual dimensions, suggesting a single construct. More recent research has proposed psychological capital as a second-order factor (Avey, Luthans, & Jensen, 2009; Avey, Luthans, & Youssef, 2010; Gooty, Gavin, Johnson, Frazier, & Snow, 2009; Luthans, Avey, Clapp-Smith, & Li, 2008; Luthans, Avolio, et al., 2007). However, replication of these findings is an important foundation to establish. Furthermore, given that each individual dimension is expected to link with ethical leadership, psychological capital, as a single construct, should also be positively related to ethical leadership.

**Hypothesis 1:** The structure of psychological capital will be a second-order factor.

### **Psychological Capital and Ethical Leadership**

Although I have found no research investigating the link between ethical leadership and leader psychological capital, there is some research that has shown that psychological capital is related to transformational leadership, which is one of the key

ways that ethical leaders communicate and reinforce appropriate conduct (Brown et al., 2005). Consideration should be given to how transformational leadership is measured. The items on the Multifactor Leadership Questionnaire (Bass & Avolio, 1994) demonstrate some similarities to the items measured by psychological capital. For example, the MLQ items ask about optimism for the future, vision for the future, and confidence about achieving goals, all of which are examined by the Psychological Capital Questionnaire.

Previous research has found positive traits such as hope, optimism, and resiliency have been predictive of transformational leadership (Peterson, Walumbwa, Byron, & Myrowitz, 2008) and all of these factors are found in psychological capital. Furthermore, self-efficacy has been found to explain the relationship between ethical leadership and performance (Walumbwa et al., 2011) and ethical leadership has been linked to follower optimism (De Hoogh & Den Hartog, 2008), implying that there are already existing relationships between the psychological capital factors and ethical leadership.

Regarding followers, McMurray, Pirola-Merlo, Sarros, and Islam (2010) found a positive effect of transformational leadership on follower psychological capital. Gooty and colleagues (2009) found that psychological capital explained the relationship between transformational leadership and follower job performance and organizational citizenship behaviours. Additionally, Gooty and colleagues (2009) found a direct link between follower psychological capital and follower perception of their leaders' transformational leadership. Ethical leaders are role-model worthy (Brown & Treviño,

2006). Leaders with high levels of psychological capital are hopeful, possess self-efficacy, are resilient, and optimistic, all of which are aspirational qualities.

Given the links between transformational leadership and ethical leadership (Bass & Avolio, 2000; Brown et al., 2005; Treviño et al., 2003; Turner et al., 2002) and transformational leadership and psychological capital (Gooty et al., 2009; Peterson et al., 2008) it is not unreasonable to expect a relationship between psychological capital and ethical leadership. The second part of this research explores the relationship between these constructs and I propose that:

**Hypothesis 2:** Psychological capital will be positively related to ethical leadership. This is because hopeful, competent, resilient, and optimistic leaders should demonstrate behaviours that are honest, consistent and fair, inspire trust, and act with integrity.

*Hypothesis 2a:* Hope, as an individual dimension will be positively related to ethical leadership. Having both the ability to see the way forward, and the motivation to work towards the goal are central to many forms of leadership and therefore should also be related to ethical leadership.

*Hypothesis 2b:* Self-efficacy, as an individual dimension will be positively related to ethical leadership. Ethical leaders demonstrate appropriate conduct and having the knowledge, skills and abilities to do a job well are a part of appropriate conduct.

*Hypothesis 2c:* Resiliency, as an individual dimension will be positively related to ethical leadership. Ethical leaders promote dedication in



followers and resiliency is key to persisting in adverse situations, and quickly bouncing back to address the next situation.

**Hypothesis 2d:** Optimism, as an individual dimension will be positively related to ethical leadership. Ethical leaders are concerned for the wellbeing of their followers, demonstrating both consideration and fairness, which could influence a follower's perception about the future, resulting in increased optimism.

**Hypothesis 3:** Psychological capital as a single construct will predict ethical leadership over and above the individual dimensions of psychological capital. This is because previous research has demonstrated the synergistic effects of psychological capital as a single dimension.

### **Method**

This research was conducted using a two-study approach. Study one was the confirmation of the structure of psychological capital and study two was the examination of the relationship between psychological capital and ethical leadership.

#### **Study One**

Recent research (Dawkins, Martin, Scott, & Sanderson, 2013) has called for further study of the construct validity of psychological capital. Study one is the assessment of the structure of psychological capital.

#### **Participants**

Participants consisted of a sample of working adults who had at least one subordinate in the past six months. This sample, purchased through Qualtrics, ( $N = 440$ ),

completed demographic information (See Appendix A) including age ( $M = 42.09$ ,  $SD = 10.16$ ), gender (Female 177/40.2%, Male 263/59.8%), ethnicity (74.3% Caucasian, 10.2% African American, 15.5% Other), education completed (less than a college certificate 27.5%, some college to some university 18.5%, university graduate 29.2%, some graduate training to post graduate training 24.8%), position tenure ( $M = 7.56$ ,  $SD = 6.53$ ), number of subordinates ( $M = 21.45$ ,  $SD = 82.48$ ), organizational tenure ( $M = 10.07$ ,  $SD = 8.02$ ), industry employed in (professional, scientific, and technical services 11.4%, manufacturing 10.9%, health care and social assistance 10.0%, retail 9.8%, construction 6.6%, financial and insurance 6.4%, other 44.9%), and occupation (management 36.8%, business, finance and administrative 17.3%, sales and service 12.7%, health 8.6%, social science, education, government and religion 7.7%, trades, transport and equipment operators 5.9%, primary industry 5.7%, other 5.3%).

### **Measures and Procedure**

Participants completed demographics, the one measure of interest in this study (psychological capital) and a number of other measures not used in this study.

**Psychological Capital Questionnaire (PCQ).** Participants completed the 24-item Psychological Capital Questionnaire (Luthans, Avolio, et al., 2007). This scale measures the self-reported psychological capital of the participants (See Appendix B). Recent research has reported good internal consistent reliability with Cronbach alpha coefficients ranging from .88 to .89 (Luthans, Avolio, et al., 2007). In this sample, the Cronbach alpha for the total scale was .94. Participants were instructed to use a six-point rating scale (i.e. 1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Somewhat Disagree*; 4 =

*Somewhat Agree*; 5 = *Agree*; and 6 = *Strongly Agree*) to describe how they think about themselves right now. Higher scores on this self-report scale mean that participants believe they have higher levels of psychological capital. A sample item of Hope is, *'If I should find myself in a jam at work, I could think of many ways to get out of it'* (Cronbach alpha .86). A sample item of Self-efficacy is, *'I feel confident contacting people outside the organization (e.g., suppliers, customers) to discuss problems'* (Cronbach alpha .91). A sample item of Resiliency is, *'I can get through difficult times at work because I've experienced difficulty before'* (Cronbach alpha .79). A sample item of Optimism is, *'I'm optimistic about what will happen to me in the future as it pertains to work'* (Cronbach alpha .75). In this sample all Cronbach alphas were higher or consistent with previous research.

**Data Screening for Attending.** The data used in the leader sample was purchased from Qualtrics. Qualtrics is an American research company that uses groups of 'panel partners' to collect data through online surveys. Their website states that they are currently used by over 1300 colleges and universities internationally, are in 97 of the top 100 business schools, and are used by every major U.S. University (<http://www.qualtrics.com/about/>). However, as with most survey research, there were issues of attending which had to be addressed.

The first stage of data collection was a soft-launch, where Qualtrics collects 10% of the proposed amount of data and then provides it to the client for review. Based on the initial 10% data collection, elimination protocols such as automatically excluding participants with excessively short timing for survey completion, mathematically

impossible responses, and speed bumps were used and are described below. Post-protocol implementation, the remainder of a purchased sample was collected.

*Embedded Screening.* Inspection of the soft-launch data revealed that a number of participants were ‘speeding’. Speeding is the term that Qualtrics uses to describe participants who complete a survey in an unrealistically short time. Speeders do not actually read the questions; they simply select random responses to quickly get through a survey. In order to combat speeders, the following protocols were used:

*Excessively Short Timing.* The first protocol to protect against speeders was the use of survey timers. Inspection of the soft-launch data resulted in an average response time of just over 11 minutes (670 seconds) to complete demographics, seven scales ranging in nine to 24 items, and read the instructions. Data from participants who took less than four minutes to complete the survey were not included in the final dataset delivered by Qualtrics.

*Mathematically Impossible Responses.* The second protocol to protect against speeders was an evaluation of mathematically impossible responses. The first was a comparison between time in position and time with the organization. Participants who reported being in their position at the organization for a longer period of time than they reported being with the organization were eliminated. The second was a comparison between age and tenure with the organization. Participants reported tenure with the organization was subtracted from their reported age. Those participants with a value less than 16 did not have their data included in our sample.

*Speed Bumps.* The third protocol to protect against speeders was the use of a tool that Qualtrics refers to as ‘speed bumps’. Speed bumps are questions embedded in a survey that direct participants to respond to a survey by selecting a specific response of all available responses. A sample speed bump item is, ‘Please select ‘strongly agree’ to continue’. Three speed bumps were used - one that directed participants to select the response on the far right, one that directed participants to select the response on the far left, and one that directed participants to select the response in the centre. The speed bumps were placed close to items of similar length to the preceding question, so it is not obvious to a participant who speeds. Given these criteria, two speed bumps were embedded in the Psychological Capital survey between items seven and eight as well as items 15 and 16. The third speed bump was placed in a survey that was collected at the same time as this research, but not used for the current investigation. Participants who missed a speed bump did not have their data provided by Qualtrics for our sample.

*Post Data Collection Screening.* In addition to the above-mentioned screening to reject speeders from the data set, post data collection screening ( $N = 499$ ) was conducted through the inspection of reverse coded items (Schmitt & Stults, 1985) in the Psychological Capital scale.

*Reverse-Coded Items.* Embedded within the Psychological Capital scale are three reverse-coded items: item 13 which falls under the resiliency sub-scale, and items 20 and 23 which fall under the optimism sub-scale. I identified potential non-attenders by inspecting the response to the item directly before and after each reverse-coded item. When a participant response to a reverse-coded item two points or more different from

both the item before and the item after, it was flagged as being a potential attending issue.

Inspection of the final data set revealed that of 499 participants, 59 participants responded with two or more points difference to the item immediately before and immediately after each of the reverse-coded items for all three reverse-coded items. There were 61 cases where participants had responded with two or more points of difference to the item immediately before and immediately after each of the reverse-coded items for two of three reverse-coded items. A total of 99 cases where participants had responded with two or more points of difference to the item immediately before and immediately after each of the reverse-coded items for one reverse coded item. Finally, there were 280 cases with no obvious reverse-coding item issues. That is not to say that there were not attending issues for this group, simply that they did not demonstrate the dramatic differences of the other groups. After consideration of the all possible courses of action, I decided to eliminate those participants who had responded with two or more points of difference to all three reverse-coded items, a total of 59 participants were eliminated. This resulted in a total leader sample size of  $N = 440$ .

## **Study Two**

Study two was the examination of the relationship between psychological capital and ethical leadership.

## **Participants**

This study consisted of a matched set of participants. The participants of study one asked the follower sample to participate through email invitation. Followers were invited to evaluate the leadership of the participant in the leader data sample, ( $N = 47$ ).

Follower participants in this sample, completed demographic information including age ( $M = 38.6$ ,  $SD = 12.0$ ), gender (female 21/44.7%, male 26/55.3%), ethnicity (Caucasian 72.3%, African American 12.8%, other 14.8%), education completed (high school graduate 21.3%, some college/college graduate 40.4%, some university/university graduate 25.6%, some graduate training to post graduate training 12.7%), current work status (full-time 83.0%, part-time 14.9%, not currently working 2.1%), how long they had worked for the leader who had sent the invitation ( $M = 4.3$ ,  $SD = 3.7$ ), organizational tenure ( $M = 5.4$ ,  $SD = 5.9$ ), industry employed in (manufacturing 12.8%, retail 12.8%, professional, scientific, and technical services 10.6%, transportation and warehousing 10.6%, health care and social assistance 6.4%, other 48.8%), and occupation (business, finance and administrative 23.4%, sales and service 17.0%, management 12.8%, primary industry 12.8%, trades, transport and equipment operators 10.6%, health 8.5%, processing, manufacturing and utilities 6.4%, other 8.5%). The leaders in this study were drawn from study one based on having a matching follower. Leader participants in this sample are age ( $M = 45.4$ ,  $SD = 10.8$ ), gender (female 22/46.8%, male 25/53.2%), ethnicity (Caucasian 74.5%, Latin America 8.5%, other 17.1%), education completed (some high school or high school graduate 10.6%, some college/college graduate 42.5%, some university/university graduate 25.5%, some graduate training to post graduate training 21.3%), organizational tenure ( $M = 12.5$ ,  $SD = 9.1$ ), position tenure ( $M = 9.3$ ,  $SD = 6.4$ ), number of subordinates ( $M = 6.2$ ,  $SD = 11.3$ ), industry employed in (manufacturing 14.9%, professional, scientific, and technical services 14.9%, retail 12.8%, health care and social assistance 10.6%, transportation and warehousing 6.4%,

other 46.8%), and occupation (management occupations 42.6%, business, finance and administrative 12.8%, sales and service 12.8%, primary industry 10.6%, trades, transport and equipment operators 8.5%, other 12.8%).

### **Measures**

In addition to providing demographics and responding to the following scale, a number of other measures were collected but not used in this study.

**Ethical Leadership Scale (ELS).** Participants completed the 10-item Ethical Leadership Scale (Brown et al., 2005). This scale measures the self-reported ethical leadership (See Appendix C) and has a Cronbach alpha of .92 (Brown et al., 2005).

Participants are instructed to rate their supervisor's style on the statements using a five-point Likert-like scale (i.e. 1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Neutral*; 4 = *Agree*; and 5 = *Strongly Agree*). Higher scores on this scale mean that the follower believes that the leader has higher levels of ethical leadership. Sample items from this scale include, '*My immediate supervisor disciplines employees who violate ethical standards*' and '*My immediate supervisor defines success not just by results but also the way that they are obtained*'. For this sample the Cronbach alpha was .90.

### **Procedure**

Participants completed self-reports on psychological capital and leader evaluations of ethical leadership. I obtained the follower data set by asking participants in the leader sample to email a minimum of one follower and invite them to participate in this study. Followers were incentivized by entry into a draw for an iPad mini. In order to be eligible for the draw, follower participants needed to complete the survey and their



response set needed to be matched to a leader in the leader data sample purchased from Qualtrics. Participants completed an evaluation of the leaders ethical leadership and other measures not used in this study. Leader and follower data was matched using an embedded survey identification number.

**Post Data Collection Screening.** Although the Psychological Capital scale completed by followers was not used in this study, post data collection screening was conducted through the inspection of reverse coded items in this scale and using the same criteria as was used for the leaders in study one.

Inspection of the data set revealed that of 87 participants, 19 participants responded with two or more points difference to the item immediately before and immediately after each of the reverse coded items for all three reverse coded items. This resulted in a total follower sample size of  $N = 68$ . Of these 68 cases, only 49 had a matching leader identification number. In three cases, there were two response sets for a single leader suggesting that either two different followers completed the evaluation, or that a single follower completed the evaluation twice in order to gain a second entry to the participant draw. Given the small number of duplications, and the potential of the second follower actually being the same person as the first follower but completing the assessment twice, it was decided to use the first case that matched to a leader and eliminate the second leaving a total of  $N = 47$  in the matched data set.

**Data Cleaning.** In order to ensure statistical validity, data was screened and cleaned following the recommendations of Tabachnick and Fidell (2013).

First, an assessment of univariate values was conducted through inspection of

univariate descriptives and univariate outliers. All values, means, and standard deviations were within expected ranges. Visual inspection of histograms suggested a relatively normal distribution. Four univariate outliers were found and inspected case-by-case however, no transformations were conducted at this level. An evaluation of missing data was conducted and data was missing completely at random. Inspection of histograms, skewness, and kurtosis suggested normal distribution of the data at both the item and scale levels. No multivariate outliers were found.

### **Analyses and Results**

All analyses were conducted using SPSS for Mac version 20 and EQS version 6.1.

#### **Study One: Confirmatory Factor Analyses and Measurement Model of Psychological Capital**

The factor structure of the Psychological Capital scale was examined by using Confirmatory Factor Analysis (CFA) to test the measurement model and item-total correlations following recommended procedures (Hinkin, 1995), to compare a one-factor structure, a four-factor structure, and a second-order factor of the 24-item Psychological Capital scale (Correlations for this study are presented in Table 1).

In the one-factor structure, all items were loaded on a single factor and allowed to freely correlate while the first item fixed to one. Maximum likelihood methods were used and individually all items were within accepted (Tabachnick & Fidell, 2013) skewness and kurtosis parameters (less than three for skewness and less than ten for kurtosis). However, due to multivariate kurtosis, robust measures were assessed.

Individual items in the one-factor model all loaded at .5 level or better with the exception of two reverse-coded items which loaded at the .3 level. The one-factor model was a poor fit  $X^2_{\text{robust}}(252, N = 440) = 817.29, p = .000, CFI = .81, RMSEA = .07 \text{ CI} [.07-.08], AIC = 313.29$  (See Figure 1).

In the four-factor model, each of the four facets of psychological capital were affiliated with their proposed six items, with the first item fixed to one and all remaining items of the facet allowed to freely correlate. Each of the four facets are a mean score of its proposed six affiliated items. Maximum likelihood methods were used and individual all items were within accepted skewness and kurtosis parameters. However, due to multivariate kurtosis, robust measures were assessed. There were modest to moderate improvements in factor loadings. The four-factor model fit was  $X^2_{\text{robust}}(246, N = 440) = 542.21, p = .000, CFI = .90, RMSEA = .05 \text{ CI} [.05-.06], AIC = 50.21$ , suggesting a better fit than the one-factor model (See Figure 2).

Table 1

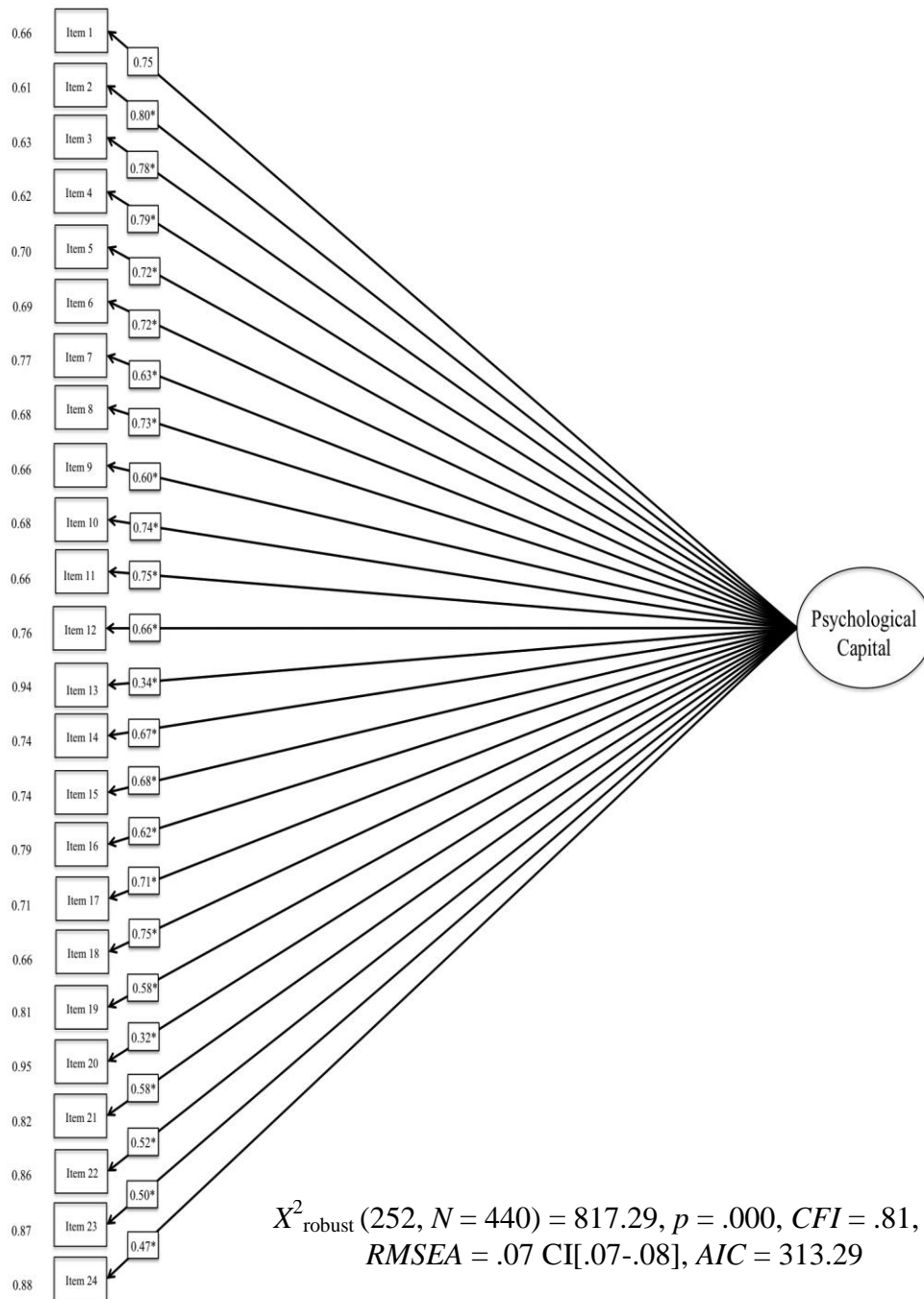
*Correlations for Study One*

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Gender	-.10*										
3. Ethnicity	.05	-.11*									
4. Education	.04	.12**	.00								
5. Position Tenure	.43**	.01	.05	.09*							
6. Number of Subordinates	-.10*	-.05	.03	.03	.05						
7. Organization Tenure	.45**	.04	.09	.11*	.80**	.02					
8. Industry	.05	-.11*	-.04	.01	.00	-.05	-.01				
9. Occupation	.02	.05	-.01	-.14**	-.07	-.14**	-.08	.04			
10. PsyCap	.30**	-.06	.07	.02	.10*	.12*	.08	.10*	.04		
11. Ethical Leadership	.24**	-.12*	.05	.06	.06	.12*	.03	.15**	.05	.73**	-

*Note.* \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed). Both Psychological Capital and Ethical Leadership are self-ratings in this study.

Figure 1

*Results of One-Factor Confirmatory Factor Analysis*



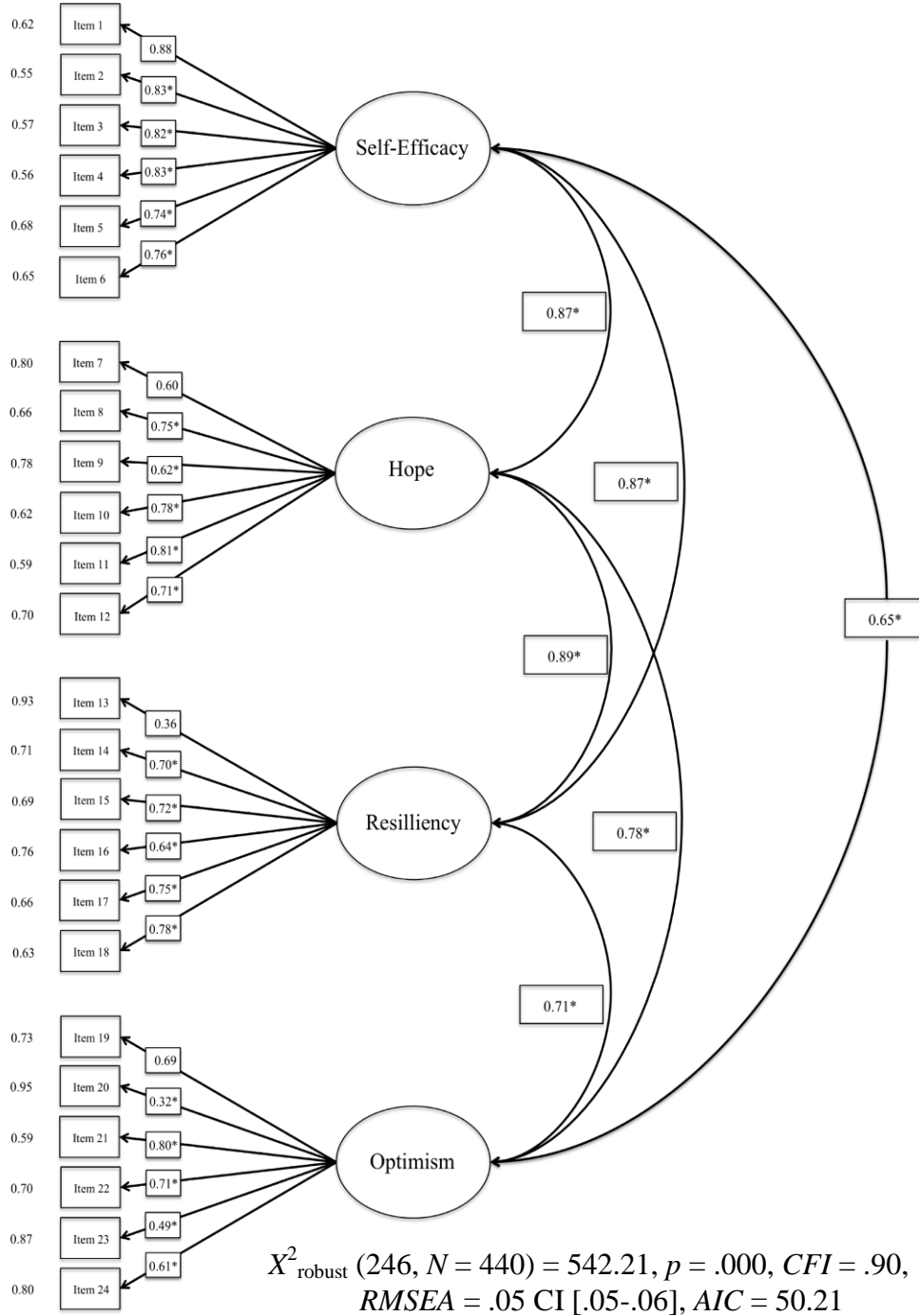
*Note.* Values presented are the standardized loading for each item. The first item of each set was not significant as it was fixed to a value of one.

In the second-order factor model, each of the four facets of psychological capital were fit with their proposed six items, with the first item fixed to one and all remaining items of the facet allowed to freely correlate. Then, the four facets were fit to the second order factor with the first facet fixed to one and the remaining three facets allowed to freely correlate. Each of the four facets are a mean score of its proposed six affiliated items, and psychological capital is a mean score of all 24 items. As this model had similar skewness and kurtosis parameters, as well as multivariate kurtosis as in the previous two models, robust measures were assessed. There was modest to moderate improvements in factor loadings. The second-order factor model fit was  $X^2_{\text{robust}}(248, N = 440) = 552.16, p = .000, CFI = .90, RMSEA = .05 \text{ CI } [.05-.06], AIC = 56.16$  (See Figure 3).

Overall, this suggests that both the second-order factor model fit is improved over the one-factor model and virtually the same as the four-factor model. I consider parsimony as being simplicity. In this case it represents the model with the fewest parameters. Therefore, as the two latter models fit equally, and in the interests of parsimony, the four-factor model is preferred (See Table 2).

Figure 2

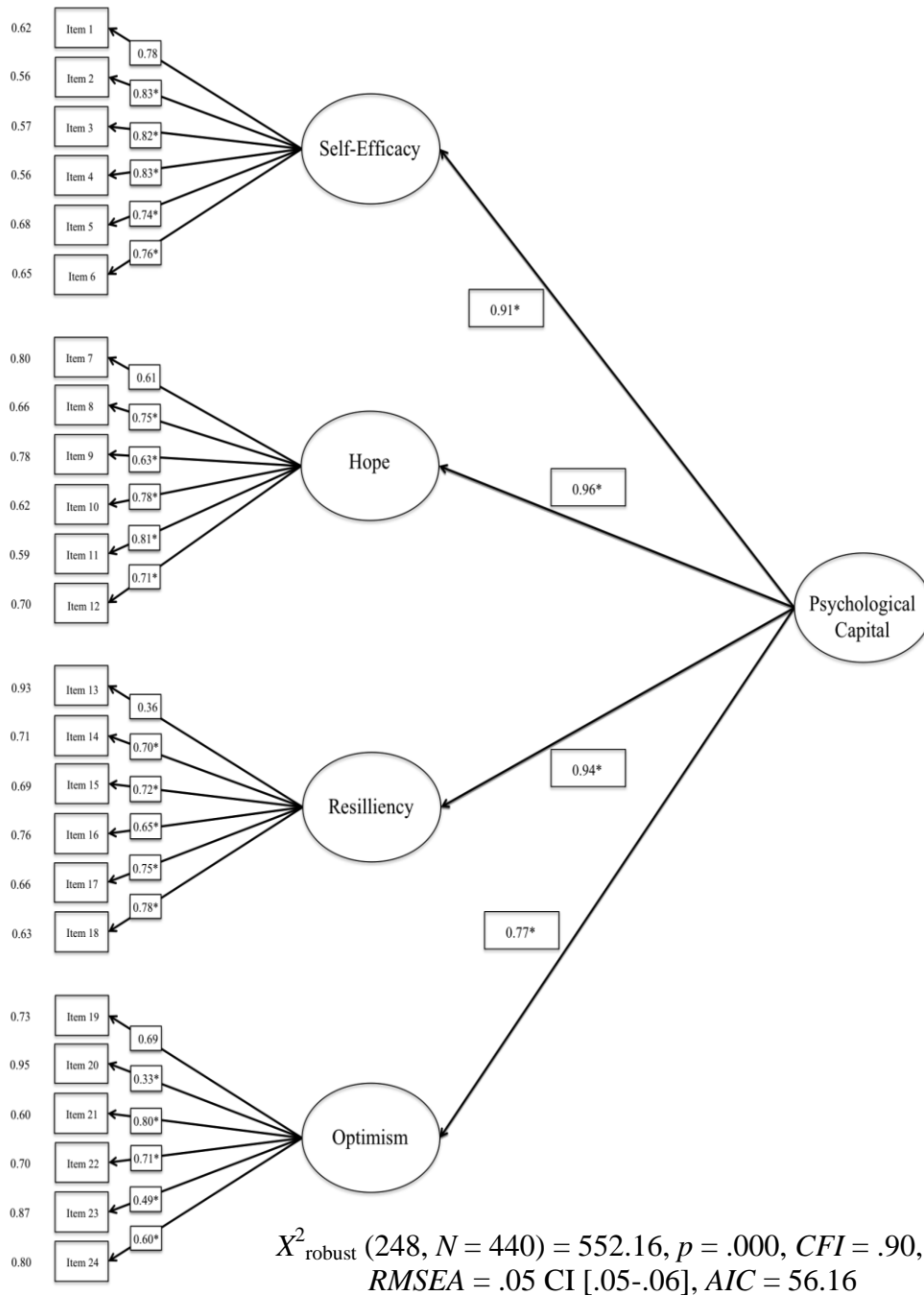
Results of Four-Factor Confirmatory Factor Analysis



Note. Values presented are the standardized loading for each item. The first item of each set was not significant as it was fixed to a value of one.

Figure 3

*Results of Second-Order Factor Confirmatory Factor Analysis*



*Note.* Values presented are the standardized loading for each item. The first item of each set was not significant as it was fixed to a value of one.



Table 2

*Results of Competing Models Confirmatory Factor Analysis*

Model	Factor	robust Chi-square	df	CFI	RMSEA
Model 1	One factor: all 24 items were loaded onto a single factor (psychological capital)	817.29	252	0.81	0.07
Model 2	Four factors: all items were loaded onto their theoretically proposed factor (hope, self-efficacy, resilience, optimism)	542.21	246	0.90	0.05
Model 3	Second order factor: all items were loaded onto their theoretically proposed factor (hope, self-efficacy, resilience, optimism) and then each factor was loaded onto one factor (psychological capital)	552.16	248	0.90	0.05

*Note.* All models are reporting robust Satorra-Bentler Scaled Chi-square.

**Study Two: Examining the Relationship Between Psychological Capital and Ethical Leadership**

All analyses were conducted using SPSS for Mac version 20.

**Examining Differences.** T-tests, ANOVAs and correlations were conducted to assess differences on the basis of demographic variables (i.e., age, gender, education, industry, occupation, number of subordinates, and occupational and position tenure) for the predictor (i.e., psychological capital) and criterion (i.e., ethical leadership) variables.<sup>1</sup>

**Age.** The relationship between age and resiliency was significant ( $r = .39, p = .007$ ), such that older leaders ( $M = 5.40, SD = .40$ ) were higher in resiliency than younger leaders ( $M = 4.89, SD = .78$ ). There were no other significant correlations other than those between psychological capital and its own sub-scales (See Table 3). For this reason, age was controlled for in subsequent regression analyses.

**Gender.** A *t*-test was conducted to examine differences between males ( $N = 25$ ) and females ( $N = 22$ ) and resulted in a significant difference for ethical leadership ( $t(45) = 3.22, p = .002$ ) such that ethical leadership was rated by followers as higher for women ( $M = 4.60, SD = .42$ ) than for men ( $M = 4.1, SD = .56$ ). For this reason, I controlled for gender (See Table 4) in regression analyses.

**Education.** Due to the small sample size, education was grouped into four categories: less than a college certificate/diploma ( $N = 9$ ), college certificate/diploma ( $N = 16$ ), some university training or university graduate ( $N = 12$ ), some graduate level training or more ( $N = 10$ ). Examination by ANOVA resulted in no significant differences (See Table 5).

**Industry.** Due to the small sample size, an ANOVA could not be conducted.

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<sup>1</sup> A series of *t*-tests were conducted to compare leaders in study one and study two using the Psychological Capital scale, and its four factors. Comparison of mean scores resulted in no significant differences between groups.

There was no appropriate way to group industry for this sample.

***Number of Subordinates.*** A correlation was performed to examine differences in the number of subordinates of the leader. There were no significant correlations found other than those between psychological capital and its own sub-scales (See Table 3).

***Occupation.*** Due to the small sample size, an ANOVA could not be conducted with the data in the form it was collected as the groups were too small. Therefore, occupation was grouped into management occupations ( $N = 20$ ) and all other occupations ( $N = 27$ ) in order to run a  $t$ -test. No significant difference was found (See Table 6).

***Organizational Tenure.*** A correlation was performed to examine differences in how long the leader had been with their organization. A significant correlation was found between organizational tenure and hope ( $r = .31, p = .04$ ), such that leaders who had been with the organization longer reported higher levels of hope ( $M = 5.3, SD = .58$ ) than those who had been with the organization for less time ( $M = 4.9, SD = .76$ ). There were no additional significant correlations other than those between psychological capital and its own sub-scales (See Table 2). For this reason, I controlled for organizational tenure in regression analyses.

***Position Tenure.*** A correlation was performed to examine differences in how long the leader had been in their position with the organization. There were no significant correlations other than those between psychological capital and its own sub-scales (See Table 2).

Table 3

*Correlations for Age, Number of Subordinates, Organizational Tenure, and Position Tenure*

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	45.23	10.76	-									
2. Number of Subordinates	6.17	11.28	-0.09									
3. Organizational Tenure	12.50	9.12	.48**	.19								
4. Position Tenure	9.29	6.41	.53**	.23	.88**							
5. Psychological Capital	5.08	.59	.27	.22	.28	.25						
6. Hope	5.06	.72	.23	.16	.31*	.29	.92**					
7. Efficacy	5.34	.61	.14	.23	.22	.18	.85**	.78**				
8. Resiliency	5.16	.65	.39**	.14	.28	.20	.86**	.72**	.66**			
9. Optimism	4.75	.75	.18	.21	.17	.20	.84**	.69**	.54**	.62**		
10. Ethical Leadership	4.35	.55	.13	.05	.00	.07	.17	.23	.04	.08	.22	-

*Note.* \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed). Ethical Leadership is rated by the follower

Table 4

*T-tests for Gender*

	Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>																																																								
Psychological Capital	Female	22	5.16	.52	.93	45	.36																																																								
	Male	25	5.00	.65				Hope	Female	22	5.13	.70	.57	45	.57	Male	25	5.01	.75	Self-Efficacy	Female	22	5.38	.62	.44	45	.66	Male	25	5.30	.61	Resiliency	Female	22	5.29	.53	1.24	45	.22	Male	25	5.05	.74	Optimism	Female	22	4.86	.72	.95	45	.35	Male	25	4.65	.79	Ethical Leadership	Female	22	4.60	.42	3.22	45	.00
Hope	Female	22	5.13	.70	.57	45	.57																																																								
	Male	25	5.01	.75				Self-Efficacy	Female	22	5.38	.62	.44	45	.66	Male	25	5.30	.61	Resiliency	Female	22	5.29	.53	1.24	45	.22	Male	25	5.05	.74	Optimism	Female	22	4.86	.72	.95	45	.35	Male	25	4.65	.79	Ethical Leadership	Female	22	4.60	.42	3.22	45	.00	Male	25	4.12	.56								
Self-Efficacy	Female	22	5.38	.62	.44	45	.66																																																								
	Male	25	5.30	.61				Resiliency	Female	22	5.29	.53	1.24	45	.22	Male	25	5.05	.74	Optimism	Female	22	4.86	.72	.95	45	.35	Male	25	4.65	.79	Ethical Leadership	Female	22	4.60	.42	3.22	45	.00	Male	25	4.12	.56																				
Resiliency	Female	22	5.29	.53	1.24	45	.22																																																								
	Male	25	5.05	.74				Optimism	Female	22	4.86	.72	.95	45	.35	Male	25	4.65	.79	Ethical Leadership	Female	22	4.60	.42	3.22	45	.00	Male	25	4.12	.56																																
Optimism	Female	22	4.86	.72	.95	45	.35																																																								
	Male	25	4.65	.79				Ethical Leadership	Female	22	4.60	.42	3.22	45	.00	Male	25	4.12	.56																																												
Ethical Leadership	Female	22	4.60	.42	3.22	45	.00																																																								
	Male	25	4.12	.56																																																											

Table 5

*ANOVAs for Education*

			<i>N</i>	<i>M</i>	<i>SD</i>
Psychological Capital	$F(3,43) = 1.09,$ $p = .36$	Less than college certificate/diploma	9	5.15	.67
		College certificate/diploma	16	5.17	.48
		Some university training or university graduate	12	5.16	.53
		Some graduate level training or better	10	4.78	.73
		Total	47	5.08	.59
Hope	$F(3,43) = 1.20,$ $p = .32$	Less than college certificate/diploma	9	5.20	.78
		College certificate/diploma	16	5.16	.60
		Some university training or university graduate	12	5.15	.60
		Some graduate level training or better	10	4.68	.94
		Total	47	5.06	.72
Efficacy	$F(3,43) = 1.13,$ $p = .35$	Less than college certificate/diploma	9	5.35	.71
		College certificate/diploma	16	5.42	.53
		Some university training or university graduate	12	5.47	.51
		Some graduate level training or better	10	5.03	.73
		Total	47	5.34	.61
Resiliency	$F(3,43) = .51,$ $p = .68$	Less than college certificate/diploma	9	5.28	.65
		College certificate/diploma	16	5.24	.60
		Some university training or university graduate	12	5.15	.61
		Some graduate level training or better	10	4.95	.82
		Total	47	5.16	.65
Optimism	$F(3,43) = .69,$ $p = .57$	Less than college certificate/diploma	9	4.78	.92
		College certificate/diploma	16	4.85	.76
		Some university training or university graduate	12	4.85	.60
		Some graduate level training or better	10	4.45	.79
		Total	47	4.75	.75
Ethical Leadership	$F(3,43) = 2.05,$ $p = .12$	Less than college certificate/diploma	9	4.72	.41
		College certificate/diploma	16	4.30	.54
		Some university training or university graduate	12	4.28	.58
		Some graduate level training or better	10	4.15	.55
		Total	47	4.34	.55

Table 6

*ANOVAs for Occupation*

	Occupation	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Psychological Capital	Management	20	5.14	.59	.62	45	.54
	Other	27	5.03	.60			
Hope	Management	20	5.15	.72	.70	45	.49
	Other	27	5.00	.73			
Self-Efficacy	Management	20	5.50	.53	1.61	45	.12
	Other	27	5.22	.64			
Resiliency	Management	20	5.19	.63	.26	45	.80
	Other	27	5.14	.68			
Optimism	Management	20	4.73	.79	-.21	45	.84
	Other	27	4.77	.74			
Ethical Leadership	Management	20	4.28	.60	-.69	45	.49
	Other	27	4.39	.52			

### **Assessing the Relationship Between Ethical Leadership and Psychological Capital**

Initial investigation involved a correlation analysis between psychological capital and ethical leadership. Using mean scores, the relationships between ethical leadership and psychological capital ( $r = .17, p = .26$ ), hope ( $r = .23, p = .13$ ), self-efficacy ( $r = .04, p = .80$ ), resilience ( $r = .08, p = .59$ ), and optimism ( $r = .22, p = .15$ ) were all in a positive direction, however, none of these correlations were significant and therefore an interpretation cannot be made.

Ethical leadership was then regressed onto psychological capital. Due to the group differences found in age, gender, and organizational tenure, they were controlled for by being entered in step one. In step two the four factors of psychological capital (hope, self-efficacy, resilience, and optimism) were entered, and finally the psychological capital measure as a whole was entered in the third step. Variables were entered into the equation in this order as theory propositions the idea of psychological capital as being able to predict above and beyond the four individual factors.

In step one, age, gender, and organizational tenure accounted for a significant amount of variance ( $R^2 = .19$ ,  $F(3,43) = 3.33$ ,  $p = .03$ ) in ethical leadership. A significant effect of gender was found ( $b = -.46$ ,  $SE = .16$ ,  $p = .005$ ), meaning that for men ethical leadership evaluation by the followers drops .46 as compared to women. Age ( $b = .00$ ,  $SE = .01$ ,  $p = .82$ ) and organizational tenure ( $b = .00$ ,  $SE = .01$ ,  $p = .93$ ) were not significant.

In step two, the four sub-scales of psychological capital were entered (hope, self-efficacy, resilience, and optimism), and a total 30% of the variance ( $R^2 = .30$ ,  $F(7,39) = 2.43$ ,  $p = .04$ ) in ethical leadership was accounted for when controlling for age, gender and organizational tenure. A significant effect of hope was found ( $b = .41$ ,  $SE = .20$ ,  $p = .048$ ). Therefore, for every one-unit increase in the leaders self-evaluation of hope, there is a .41 increase in follower evaluation of the leaders ethical leadership, when controlling for age, gender, and organizational tenure. Self-efficacy ( $b = -.26$ ,  $SE = .20$ ,  $p = .21$ ), resilience ( $b = -.22$ ,  $SE = .19$ ,  $p = .08$ ), and optimism ( $b = .07$ ,  $SE = .14$ ,  $p = .61$ ) were not significant.

In step three, the psychological capital scale as a whole was entered but did not predict ethical leadership over and above that accounted for by the four individual factors (See Table 7).

For exploratory purposes a second regression was conducted. In this examination, the control variables were entered in step one ( $R^2 = .19$ ,  $F(3,43) = 3.33$ ,  $p = .003$ ), psychological capital as a whole was entered in step two, and the four factors were entered in step three. When assessed in this order psychological capital as a whole



Table 7  
Regressions Examining the Psychological Capital/Ethical Leadership Relationship

Variable	Follower-rated Ethical Leadership				Follower-rated Ethical Leadership					
	R <sup>2</sup>	Adj.R <sup>2</sup>	ΔR <sup>2</sup>	F	R <sup>2</sup>	Adj.R <sup>2</sup>	ΔR <sup>2</sup>	F	b	β
Step 1	.19	.13	.19	3.33*						
Age									.00	.04
Gender									-.46**	-.42**
Org Tenure									.00	-.01
Step 2	.30	.18	.12	2.43*	.20	.13	.01	2.64		.11
Hope									.41*	.54*
Self-Efficacy									-.26	-.28
Resiliency									-.22	-.26
Optimism									.07	.10
Step 3					.30	.18	.10	2.43		
PsyCap										
										Hope
										Self-Efficacy
										Resiliency
										Optimism

Note. \* Significant at the 0.05 level (2-tailed). \*\* Significant at the 0.01 level (2-tailed).

measure accounted for 1% of the variance ( $R^2 = .20$ ,  $F(4,42) = 2.64$ ,  $p = .05$ ) and the individual factors accounted for a further 10% of the variance ( $R^2 = .30$ ,  $F(7,39) = 2.43$ ,  $p = .04$ ). By entering the variables into the regression in this method, results could not be calculated for hope and resiliency became significant ( $b = -.63$ ,  $SE = .31$ ,  $p = .045$ ). The inability to calculate results for psychological capital in the first regression, combined with the inability to calculate results for hope in the second regression, demonstrates the collinearity between hope and psychological capital (See Table 7). Therefore, based on theory and conceptualization of psychological capital as a second-order factor, I decided maintain the initial regression.

### **Discussion**

The purpose of this research was to confirm the factor structure of psychological capital and then to examine the relationship between psychological capital and ethical leadership.

#### **Study One**

The first step of this research was a competing-models confirmatory factor analysis of the structure of psychological capital. Given established theory, I looked at the one-factor, four-factor, and second-order factor of psychological capital. Based on this sample, hypothesis one (the structure of psychological capital will be a second-order factor) was partially supported. The four-factor model and the second-order factor model fit the data equally well. As there are conflicts in measurement in the existing studies (i.e. use of total score or use of mean scores), further validation is necessary in order to clearly establish the psychometric properties of the Psychological Capital scale.

Over the past 10 years there has been debate regarding the structure of psychological capital. Early research (Luthans et al., 2005; Luthans, 2002a, 2002b) considered a three-factor structure of psychological capital before settling on a four-factor model (Luthans, Youssef, et al., 2007; Luthans & Youssef, 2004) that has become the accepted structure of psychological capital. Eventually, psychological capital was assessed as a composite structure (Luthans, Avolio, et al., 2007). Some research has found psychological capital to be a second-order factor (e.g. Chen & Lim, 2012; Luthans, Avolio, et al., 2007) but not all research supports this finding. These conflicting results suggest that, as recommended by Dawkins and colleagues (Dawkins et al., 2013) further exploration of the psychometric properties of the Psychological Capital scale is required.

### **Study Two**

The second part of this research examined the relationship between psychological capital and ethical leadership. Initial analysis examining group differences revealed that in this sample there were significant differences in age, gender, and organizational tenure.

**Age.** Examination through correlation revealed that older workers reported higher levels of resiliency than younger workers. This finding is not entirely surprising. The relationship between increased age and increased resilience has been found in general populations (Lundman, Strandberg, Eisemann, Gustafson, & Brulin, 2007; Portzky, Wagnild, De Bacquer, & Audenaert, 2010) and with athletes (Nicholls, Polman, Levy, & Backhouse, 2009). Luthans (2002b) spoke to the ideas of recovering and bouncing back. As we age, we gain more life experience. As such, what was once

perceived as stressful changes as a result of our prior experience with the stressor, allowing us to recover and come back stronger from these experiences.

**Gender.** Examination through *t*-test revealed that women received higher scores on evaluations of ethical leadership by their followers than men did. Gender differences in ethical behavior have been found in business students (Albaum & Peterson, 2006; Betz, Connell, & Shepard, 1989) and ethical decision making (Morrell & Jayawardhena, 2010). However, Brown and colleagues (2005) had proposed that there would be no gender differences in ethical leadership based on research (e.g. Ambrose & Schminke, 1999). What we see in this sample may actually be a result of leadership style of the women in our sample. Trinidad and Normore (2005) found that women preferred to use transformational leadership styles. Given the relationship between ethical leadership and transformational leadership previously discussed in this work, it is possible that the higher rating for women in ethical leadership stem from their use of transformational leadership.

**Organizational Tenure.** Correlation analyses revealed that increased organizational tenure was related to increased levels of hope. Mathieu and Zajac (1990) proposed the idea that as organizational tenure increases, the likelihood of benefits, such as pension, increases, therefore resulting in increased commitment to the organization. In their research, Mathieu and Zajac (1990) found that organizational tenure had a stronger relationship to overall commitment and specifically, calculative commitment, than position tenure. A recent meta-analysis by Reichard and colleagues (2013) confirmed the

relationship between organizational commitment and hope. Potentially, it is that commitment that results in employees staying with the organization for longer periods.

Based on this, I propose that we should expect that the relationship between organizational tenure and hope would exist. The longer an employee has been with organization, the more likely he/she will have seen the organization demonstrate both the will and the way of achieving goals at both an individual and organizational level. Additionally, it could be hope that mediates the relationship between organizational tenure and commitment.

Hypotheses 2, 2a, 2b, 2c, and 2d, stated that psychological capital as a single measure and as individual factors, would have a positive relationship with follower-evaluated ethical leadership. There was a positive but non-significant correlation coefficient between ethical leadership as rated by followers and self-rated psychological capital, resulting in no support for hypothesis two. This may simply be a function of the small sample size ( $N = 47$ ) used in this research. This sample size limited the number of predictors we could include and still anticipate finding even a large effect.

In regression analysis, hope significantly predicted ethical leadership, such that higher ratings of self-reported hope was related to higher ratings of follower-rated ethical leadership, providing support for Hypothesis 2a. When taken in the context as used by Luthans (Luthans, Youssef, et al., 2007; Luthans, 2002a, 2002b) hope is about directing ones efforts towards goals and planning a way of achieving those goals. Peterson and Byron (2008) found that hope related to higher job performance and both improved quality and quantity of solutions. Additionally, the review and meta-analysis of hope

(Reichard et al., 2013) found a positive relationship between hope and work performance. Furthermore, hope has been positively related to job satisfaction, health and well-being and organizational commitment (Reichard et al., 2013). Most employees would aspire to achieve all of these outcomes. Ethical leaders must be perceived as being 'role-model worthy' (Brown & Treviño, 2006). The demonstration of successful performance of higher hope leaders, and all of the additional positive outcomes, supports the consideration of the hopeful leaders as 'role-model worthy' and may explain why we found a significant relationship between hope and follower-rated ethical leadership, and support for hypothesis 2a.

Support for hypothesis 2b, a positive relationship between self-efficacy and follower-rated ethical leadership was not found. I had proposed that this relationship would exist as a result of the component of appropriate conduct in ethical leadership and the confident competence that comes from self-efficacy. It is possible that followers do not view a leaders confidence in themselves as being related to how ethically they perform. Alternatively, it could be that the leaders in this sample did not demonstrate this confidence to their followers. That is, although the leaders feel that they are confident, it is an internal confidence rather than something that is conveyed to their followers.

Support for hypothesis 2c, a positive relationship between resiliency and follower-rated ethical leadership was not found. I had proposed that this relationship would exist as a result of the ability of leaders to overcome adversity and promote a similar resiliency in their followers. It is possible that followers in this sample do not see their leaders as handling stress well, multitasking, or having the ability to move on from

setbacks, which is what the resiliency questions of psychological capital seem to tap into. A recently developed new measure of resilience, the Workplace Resilience Inventory (WRI) has demonstrated incremental validity over Psychological Capital's measure of resilience (McLarnon & Rothstein, 2013) suggesting that there is room for improvement in the current measure of psychological capital.

Support for hypothesis 2d, a positive relationship between optimism and follower-rated ethical leadership was not found. I had proposed that this relationship would exist as a result of the concern for the wellbeing of followers that ethical leaders demonstrate. Previous research had demonstrated that optimism was less effective than hope as a predictor of positive outcomes such as academic success (Rand et al., 2011; Rand, 2009). Shorey, Snyder, Rand, Hockemeyer, and Feldman (2002) suggest the idea that an optimist has a belief about positive future outcomes, but may not have the ability or means to achieve them. This may be why followers did not perceive optimism as being related to ethical leadership.

The third hypothesis proposed that psychological capital as a single construct would predict ethical leadership, as assessed by followers, over and above the individual dimensions of psychological capital. After controlling for age, gender, and organizational tenure, I found that the four factors of psychological capital accounted for variance above and beyond what the single construct of psychological capital accounted for. In this research, I did not see the proposed synergistic effects of psychological capital. It is possible that this is simply sample-specific, however may also be conceptualization issues with the measure of psychological capital itself. The idea of

psychological capital is a little over ten years old however much of the research has been conducted by those involved in its foundation (Dawkins, et al., 2013), which may inherently bias the research.

### **Limitations**

This research was not without limitations. Data on leader psychological capital was self-report, and as such, the findings may be subject to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and result in systemic measurement errors. However, Avey, Reichard, Luthans and Mhatre (2011) conducted a meta-analysis and found that there were minimal and non-significant differences between self-rated psychological capital and self-rated, supervisor, or objective performance implying that self-reports of psychological capital may not be as significant a source of bias when compared to other self-report measures.

The sample size used for the second study in this research was small ( $N = 47$  matched pairs). As well, followers used in this study were selected by the leaders in this study, rather than being randomly selected from the pool of followers working for that leader. As such, it is possible that the leader selected a follower who would provide more favourable evaluations in the interests of social desirability

Finally, it is possible that the followers in this study did not accurately perceive the level of ethical leadership in their leaders. As discussed, Jordan and colleagues (2013) found that the relationship between follower cognitive moral development and leader evaluations of ethical leadership is not linear, but rather of function of relative leader and follower differences in cognitive moral development. What this means is that



if in our sample the followers had higher or the same levels of cognitive moral development than the leaders they were evaluating, they would not evaluate the ethical leadership of their supervisors as high as a follower with low cognitive moral development.

However, one strength of this research is that in study two a second source was used to evaluate the participant's ethical leadership, as opposed to using a self-report measure of ethical leadership, thus avoiding common method variance.

### **Future Directions**

Future research should include some additional measures that were not captured in this research. Specifically, socially desirable responding should be measured and controlled for when conducting research about ethical behaviours. Additionally, a question should be asked of the followers in matched leader-follower data if the followers perceive the leader as a legitimate role model. Bandura (1977, 1986) spoke to the idea that ethical leaders need to be attractive, credible, and legitimate role models. It would be important to measure the follower perception of legitimacy in addition to the follower perception of ethical leadership as it is possible that one cannot exist without the other.

Consideration should be given to how the paired sample is formed. In the current research, the leader selected the follower who would participate, potentially biasing the sample with followers who would provide more favourable ratings. Future research should consider the random selection of a follower or the use of multiple follower ratings of the leader. Furthermore, consideration should be given to the use of other sources of evaluation, such as peer or supervisor assessments.

Another source of valuable information on the relationship between psychological capital and ethical leadership would be to take a longitudinal approach. It has been argued the psychological capital is malleable and therefore it stands to reason that the level of psychological capital of a leader could fluctuate over time. Longitudinal studies may be able to capture this fluctuation and provide additional information about employee perceptions of ethical leadership over time. Specifically, does the perception of ethical leadership change with the fluctuation of leader psychological capital.

Finally, rather than being indicative of ethical leadership, psychological capital may actually mediate or moderate the relationship of other variables and ethical leadership. Future studies should include consideration of psychological capital in the role of mediator or moderator.

### **Conclusion**

Understanding the predictors of ethical leadership is a critical first step in understanding how we can build and promote ethicality among our leaders. This research has advanced our understanding in two ways. First, by identifying leader hope as one potential avenue of further study in the examination of ethical leadership. Second, this research provides further support to the recent call (Dawkins et al., 2013) for a review of the psychological capital construct. I did not find the proposed synergistic effects of psychological capital in this research. It is possible that many other researchers have had similar findings without those findings being published, and thus we truly don't know if this was sample phenomena, or an inherent flaw in the construct.

We know there is an acute shortfall of ethical behaviour in many organizations

including politics, business, and sport. Given the power and influence that leaders have in organizations, it is essential that we come to a better understanding of what differentiates the ethical leader from others.

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## Appendix A

## Demographic Questions for All Participants

## Descriptives - Leaders

1. How old are you?

2. Current work status?

- Full-time
- Part-time
- Neither

3. What gender are you?

- Female
- Male

4. What ethnicity do you identify with?

- African American
- Arab
- Chinese
- Filipino
- Japanese
- Korean
- Latin American
- South Asian
- South East Asian
- West Asian



- White (Caucasian)
- Other

5. What is your current level of education?

- Did not complete High School
- High school Graduate
- Some College
- College Certificate/Diploma
- Some University
- University Graduate
- Some Post-Graduate training
- Graduate Degree (Masters)
- Doctoral Degree (PhD)

6. How long have you been in your current position? (in years rounded to the nearest half-year)

7. How many subordinates do you have in your current position?

8. How long have you worked for this organization? (in years rounded to the nearest half-year)

9. Which of the following best describes the industry you work in?

- Agriculture, forestry, fishing and hunting
- Mining and oil and gas extraction
- Utilities
- Construction

- Manufacturing
- Wholesale trade
- Retail trade
- Transportation and warehousing
- Information and cultural industries
- Finance and insurance
- Real estate and rental and leasing
- Professional, scientific and technical services
- Management of companies and enterprises
- Administrative and support, waste management and remediation services
- Educational services
- Health care and social assistance
- Arts, entertainment and recreation
- Accommodation and food services
- Other services (except public administration)
- Public administration
- Military

10. Which of the following best describes your occupation?

- Management occupations
- Business, finance and administrative occupations
- Natural and applied sciences and related occupations
- Health occupations

- Occupations in social science, education, government service and religion
- Occupations in art, culture, recreation and sport
- Sales and service occupations
- Trades, transport and equipment operators and related occupations
- Occupations unique to primary industry
- Occupations unique to processing manufacturing and utilities

**Descriptives - Followers**

1. How old are you?

2. What gender are you?

- Female
- Male

3. What ethnicity do you identify with?

- African American
- Arab
- Chinese
- Filipino
- Japanese
- Korean
- Latin American
- South Asian
- South East Asian
- West Asian

- White (Caucasian)
- Other

4. What is your current level of education?

- Did not complete High School
- High school Graduate
- Some College
- College Certificate/Diploma
- Some University
- University Graduate
- Some Post-Graduate training
- Graduate Degree (Masters)
- Doctoral Degree (PhD)

5. Current work status?

- Full-time
- Part-time
- Neither

6. How long have you/did you work for the person who sent you the invitation to participate? (in years rounded to the nearest half-year)

7. How long have you/did you work for this organization? (in years rounded to the nearest half-year)

8. Which of the following best describes the industry you work in?

- Agriculture, forestry, fishing and hunting

- Mining and oil and gas extraction
- Utilities
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation and warehousing
- Information and cultural industries
- Finance and insurance
- Real estate and rental and leasing
- Professional, scientific and technical services
- Management of companies and enterprises
- Administrative and support, waste management and remediation services
- Educational services
- Health care and social assistance
- Arts, entertainment and recreation
- Accommodation and food services
- Other services (except public administration)
- Public administration
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9. Which of the following best describes your occupation?

- Management occupations

- Business, finance and administrative occupations
- Natural and applied sciences and related occupations
- Health occupations
- Occupations in social science, education, government service and religion
- Occupations in art, culture, recreation and sport
- Sales and service occupations
- Trades, transport and equipment operators and related occupations
- Occupations unique to primary industry
- Occupations unique to processing manufacturing and utilities

## Appendix B

## Psychological Capital Scale

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.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
-------------------	----------	-------------------	----------------	-------	----------------

1.

2.

3.

4.

5. I feel confident contacting people outside the organization (e.g., suppliers, customers) to discuss problems.

6.

7. If I should find myself in a jam at work, I could think of many ways to get out of it.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17. I can get through difficult times at work because I've experienced difficulty before.

18.

19.

20.

21.

22. I'm optimistic about what will happen to me in the future as it pertains to work.

23.

24.

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Note: All items except for 5, 7, 17, and 22 are left intentionally blank due to copyright restrictions.



## Appendix C

## Ethical Leadership Scale for Followers

Please rate your immediate supervisor's style on the following statements.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

1. My immediate supervisor listens to what employees have to say.
2. My immediate supervisor disciplines employees who violate ethical standards.
3. My immediate supervisor conducts his/her personal life in an ethical manner.
4. My immediate supervisor has the best interests of employees in mind.
5. My immediate supervisor makes fair and balanced decisions.
6. My immediate supervisor can be trusted.
7. My immediate supervisor discusses business ethics or values with employees.
8. My immediate supervisor sets an example of how to do things the right way in terms of ethics.
9. My immediate supervisor defines success not just by results but also the way that they are obtained.
10. When making decisions, my immediate supervisor asks "what is the right thing to do?"

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## Appendix D

## Copyright Permission for Use of Four Items from Psychological Capital Scale

**From:** Mind Garden <info@mindgarden.com>  
**Subject: Re: Psychological Capital Questionnaire and copyright**  
**Date:** June 19, 2014 at 8:35:15 PM ADT  
**To:** Katharine Berlinguette <katsmu@hotmail.com>

Thank you for asking. Yes, you have our permission to reprint a total of 4 items from the instrument.

Best,

Val

Mind Garden, Inc.

On Thu, Jun 19, 2014 at 10:09 AM, Katharine Berlinguette <katsmu@hotmail.com> wrote:

Hello and good afternoon

I am doing work at Saint Mary's for Dr. Damian O'Keefe. In reviewing your copyright, I see that there is a limitation of three sample items. However, the scale has four sub-scales (hope, optimism, self-efficacy and resilience). As such, I would like to request permission to use four sample items (one from each sub-scale) in order to be able to accurately describe the scale in my measures section of my masters thesis.

In accordance with your website, I have referred to the last page of the permission package and it states that only three sample items can be used.

Thank-you for your consideration

**M.Katharine Berlinguette**  
MSc. Industrial & Organizational Psychology (Candidate)  
Saint Mary's University  
Halifax NS



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