

Two Field Studies Examining the Association between Positive Psychological Capital and
Employee Performance

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The underlying hypothesis in research on positive organizational behavior is that positively oriented state-like individual differences will be related to performance. In the current study, multi-method data were collected from two field samples in order to test this hypothesis. Results indicate psychological capital (as indicated by individual's hope, resilience, self-efficacy and optimism) is positively related to both managers' evaluations of employee performance (subjective) as well as more objective financial performance. Implications for research and practice conclude the article.

Two Field Studies Examining the Association between Positive Psychological Capital and Employee Performance

Over the last several years considerable research attention has been given to positive psychological capacities in the workplace. This growing research stream has led to a more specific interest in the topic of positive organizational behavior (e.g., see Luthans, 2002a, 2002b; Nelson & Cooper 2007; Wright, 2003; Wright & Cropanzano, 2007; Youssef & Luthans, 2007) which has been 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” (Luthans, 2002b, p. 59). To date, these capacities include self-efficacy, hope, optimism, and resilience, and are collectively referred to as ‘psychological capital’ (Avey, Luthans & Youssef, In Press; Luthans, Youssef, & Avolio, 2007; Luthans, Avolio, Avey, & Norman, 2007) or ‘core confidence’ (Stajkovic, 2006).

This psychological capital (PsyCap) incorporated four widely researched and complementary ‘state-like’ (for the argument on traits vs. states see Avey, Luthans & Mhatre, 2008; Luthans, Avolio et al 2007) constructs of optimism, hope, efficacy, and resilience (for construct validation see Luthans, Avolio, Avey & Norman, 2007). One interesting aspect of this newly developing core construct is its applicability to issues associated with performance enhancement.

While previous research has investigated the relations between PsyCap and performance, there have been consistent limitations with relying on managerial related performance in most cases. These limitations have prevented a better understanding of the existence and extent of the relationship between PsyCap and worker performance as managerial rated performance,

especially when a single item and single rater as is often the case, is poorly related to actual worker performance (Bommer et al., 1995). Thus, given that by definition POB seeks to understand the relations between positive psychological capacities and employee performance (Luthans, 2002; Luthans & Youssef, 2007), the majority of research examining performance in the area of positive organizational behavior has used manager rated performance as the criterion and Bommer and colleagues (1995) have demonstrated the limitations of manager rated performance, the purpose of this research is to test the primary hypotheses in the POB domain that positive psychological capacities will be related to employee performance. This research extends previous findings in POB by examining the relationship between employee PsyCap and both objective and subjective employee performance across two field studies. While research on PsyCap has associated this multi-dimensional construct with outcomes such as satisfaction, commitment, stress, intentions to quit and positive emotions, the links between PsyCap and employee performance are still emerging. While some constructs from the POB domain such as psychological well-being have been related to employee job performance (e.g., Wright & Cropanzano, 2000; Wright, Cropanzano & Bonett, 2007), there is theoretical need for this study not only in terms of PsyCap, but it will also add to the body of knowledge on POB and how positively oriented constructs relate to job performance.

Theoretical Background

There can be little doubt that the emergence of positive psychology as a viable field of exploration originated first from the admonitions of American Psychological Association President Martin Seligman in the late 1990s. Dr. Seligman pointedly called upon colleagues to expand their focus of inquiry to include, “the study of excellence and the science of human happiness” (Foster & Lloyd, 2007, p.30). In essence, Seligman strove to encourage and elevate

the study of human strengths or positive feelings to a position of awareness and distinction that could possibly lead to valuable empirical exploration and better understanding.

Seligman and Csikszentmihalyi (2000) continued and developed the call for a significant shift in emphasis from the semi-singular focus on negative feelings embodied in such noteworthy fields as mental illness and psychological disorders to the inclusion of the more positive elements of the human psyche. It should be noted that Seligman regularly admitted that the positively-oriented concepts were not new to the field of study. On the contrary, positive concepts such as work ethic, hope, faith and perseverance have long been associated with the study of psychology. What was new, however, was the call for a primary focus and even paradigm shift to develop a richer understanding of what makes for a happy life inside and out of the workplace (e.g., see Sheldon & King, 2001). According to Csikszentmihalyi, “treatment is not just fixing what is broken; it is nurturing what is best.” (Seligman & Csikszentmihalyi, 2000, p.7).

Fortunately, the call for attention to positive psychology has been heeded and much research has been conducted in the last few years. Harris, Thoresen and Lopez (2007) suggest integrating the study of human strengths such as humor, hope and even spirituality into traditional counseling psychology. Harris and colleagues (2007) note that much counseling is actually conducted in illness treatment centers such as hospitals and counseling centers where the focus can easily fall on correction rather than positive enhancement. While not discounting the need for effective treatment, they recognize the often underutilized notion of positive strength building.

Foster and Lloyd (2007) further extend the use of positive psychology to practitioners of consulting psychology at both the individual level as well as the group level. Consulting psychology provides a natural extension of positive psychology due to the focus on issues such

as personal optimism, health maintenance, and even commission sales. In this applied arena, consulting psychologists can utilize positive psychology when working with individual leaders on their personal development or with teams as they work toward unification and cohesive effort.

Interestingly, the aftermath of the terrorist activities associated with the 9/11 security breach and devastation has caused people to consider the good and positive elements of their lives. The notion of personal security when facing challenging times was considered under the rubric of positive psychology by Peterson and Park (2006). Of particular interest is the linkage of how people rise to the occasion with the positive psychology concepts of hope, satisfaction with life and gratitude. Peterson and Park go on to suggest the beginning of theory building through the loose connection of positive institutions, positive traits and subjectively assessed individual positive experiences.

The study of positive psychology has made a rather important progression, moving to the workplace with the increased study of positive organizational behavior. Positive organizational behavior (POB) began to appear in 2002. Conceptually, it is important to recognize that researchers pursuing the limits of POB have been careful, in much the same vein as positive psychology advocates, to consistently note that the focus on positive psychological concepts does not imply that they are necessarily newly developed (Luthans & Avolio, 2008; Seligman & Csikszentmihalyi, 2000). Luthans (2002), for example, notes that among the findings of the famous Hawthorne studies of the 1920s is the relationship between employee performance and positive feelings. Further, there is no attempt to take away from the need for continued study of treatment-oriented psychological concepts but rather an encouragement to include the positive psychology approach of emphasizing human strengths.

Positive Psychological Capital

According to Luthans, Avolio and Youssef, (2007) psychological capital or PsyCap focuses on positive agentic motivation and serves as a latent variable reflected by self-efficacy, optimism, hope and resilience. Through PsyCap, these individual variables are seen as working together to form a unique component of the positive side of the individual's life in the workplace. While a replication of construct validation is outside the scope of this article (see Luthans, Avolio, Avey & Norman, 2007; Luthans & Youssef, 2008 for a full review) it should be noted that when considered as a higher-order construct, these positive capacities are thought to possess a common underlying positive agentic capacity considered to be critical to human motivation and performance in organizations (see Avey, Luthans et al., In Press; Luthans, Avolio, et al., 2007; Luthans, Youssef, et al., 2007; Stajkovic, 2006). In developing his arguments, Stajkovic (2006) has also provided conceptual evidence linking these same four constructs into what he terms a core confidence factor. In his review, he concluded substantial theoretical evidence and commonalities between these four constructs are such that "the four constructs share a common confidence core that exists at a higher level of abstraction" (Stajkovic, 2006, p. 1212).

Luthans and colleagues (2007, p.3) define PsyCap as "an individual's positive psychological state of development and 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 and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success".

In order to understand how PsyCap may relate to employee performance it is first necessary to conceptualize the determinants of employee performance. Campbell and colleagues (Campbell, McCloy, Opper & Sager, 1993) propose a comprehensive model of performance where there are eight dimensions of predictors. They are: (1) job-specific task proficiency, (2) non-job specific task proficiency, (3) written and oral communications, (4) demonstrating effort, (5) maintaining personal discipline, (6) facilitating peer and team performance, (7) supervision/leadership, and (8) management/administration. In this case, as described below, the mechanism that best explains how PsyCap relates to employee performance is the dimension of effort. That is, overall, when employees try harder to succeed, they generally perform better. While effort is not the only predictor of performance, Campbell and colleagues (1993) argue it is an important predictor.

The first variable considered to be an integral part of PsyCap contributing to employee performance through sustained effort is self efficacy. Stajkovic and Luthans (1998, p.66) call self-efficacy “the employee’s conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to successfully execute a specific task with a given context.” With the emphasis on the specific task it becomes clear that self-efficacy in this context is not intended to be considered as a global or overall trait but rather to focus on a given incident or action. The individual, considering the uniqueness of the situation, evaluates the likelihood or probability of the success of his or her actions in the immediate context and then engages in some action based on his/her perceived degree of self-efficacy. In a very practical sense one might simply estimate his/her degree of confidence of success in a particular situation. As Bandura (1997) argues, when one’s self-efficacy is high, they are more likely to attempt a given task (as they believe they can be successful) and apply sustained effort

as they believe they can succeed. When individuals do not believe they can succeed regardless of effort, the effort to success is then withdrawn. Thus, self-efficacy contributes to employee performance.

Optimism represents the second of the four variables that taken together form psychological capital. Optimism is differentiated from hope based on high external locus of control where a person may not be optimistic while still being hopeful. The converse could also be true with the person not being very hopeful but still feeling optimistic assuming their level of external locus of control is higher (Carifio & Rhodes, 2002). Conversely, a person with a strong internal locus of control might exhibit a high degree of optimism regarding their probability of success both in future events as well as the immediate. When the outcome of a person's action is seen as very desirable, optimism would tend to correlate with the actual performance. Previous research on optimism has found generally positive relationships with employee performance (e.g., Corr & Gray, 1996). However, some research findings suggest a double edged sword on this relationship. For example Tuten and Neidermeyer (2004) found that while an optimistic attribution style did predict lower stress, it did not predict job performance. This is likely what Seligman (1998) addresses when he argues for the value of what he calls realistic optimism versus unrealistic optimism likely contributing to failure. Realistic optimism can influence performance though sustained effort as positive expectancies will encourage continued effort. In particular, when an individual expects they will be successful, he or she is less likely to give up. Thus, those high in optimism are less likely to give up and more likely to continue to apply effort directed toward success contributing to overall employee performance.

According to Snyder (2000), the third PsyCap variable of hope is seen as a combination of successful volition (will-power) coupled with an identified plan (way-power) aimed at

successful completion of some desirable action or corresponding outcome (also see Snyder, 2002; Snyder et al., 1991). Hope is seen as a cognitive process that is complete with both realistic behaviors leading to achievable goals. Hope is much more than simple desire due to the systematic relationship between goals, behaviors and consequences of both. Although traditionally considered highly similar to optimism in everyday speech, Bryant and Cvenegros (2004) have demonstrated hope and optimism to be empirically and theoretically distinct constructs. Thus, each has a unique contribution to overall PsyCap. In terms of employee performance, Peterson and Byron (2008) assert that those higher in hope possess the goal directed effort and the uncanny ability to maneuver through obstacles to achieve success. The ability to continually generate alternative routes to goal accomplishment led to sustained effort and ultimately they “found that more hopeful sales employees, mortgage brokers, and management executives had higher job performance, as measured a year later, even after controlling for their self-efficacy and cognitive ability” Peterson and Byron (2008, p.1).

The final variable currently considered to be part of PsyCap is resilience or the ability to make a successful comeback after being assailed by problems or unexpected barriers to success (Luthans et al., 2007). Virtually all individuals at some point in their careers might expect some setbacks not consistent with their hopes and desires. Resilience represents the extent to which these individuals are able to regroup and make another assault on their goal with a realistic chance of success (Bonanno, 2004; 2005). A similar construct to resilience is Maddi’s work on hardiness. Maddi (2005, p. 261) notes that those high in resilience experience “little or no loss of functioning” after a major setback, thus enabling them to continue. Further, in terms of discrimination from hardiness, Maddi (2005, p. 261) notes “hardy attitudes amount to the courage and motivation to face stressors accurately” and do not have to do with rebounding from

them like resilience. He further notes that hardiness is a pathway to resilience and “enhances resilience in a wide range of stressful circumstances.” While distinct from hardiness, resilience may be most useful in enhancing employee performance during a stressful or turbulent environment. When setbacks do occur, resilience provides the mechanism to limit or eliminate the loss of functioning and allows employees to ‘bounce back’ to goal directed effort.

Taken together the four previously mentioned variables of self-efficacy, optimism, hope and resilience form the composite variable called psychological capital which fits Law, Wong and Mobley’s (1999) description of a multi-dimensional construct. Hobfoll (2002) refers to these multi-dimensional constructs as psychological resources. More specifically, Hobfoll argues that many psychological constructs are best understood as representing an underlying core factor and there is value in treating constructs as indicators of a composite variable. Luthans et. al., (2007) contend that the PsyCap variable stands on its own and offers unique explanations for behaviors. That is to say PsyCap is more than the sum of its individual parts. Moreover, PsyCap is said to be more pliable and state-like as opposed to being relatively rigid and trait-like. For example, in a several-year longitudinal analysis, Conley (1984) found that self opinion constructs such as PsyCap were more likely to change over time than trait-like predictors such as intelligence. In addition, Luthans and colleagues (2007) found that PsyCap was less stable than Big 5 personality traits and more stable than positive emotions. As PsyCap is an emerging second order factor comprising each of the four components, there is still much to learn about the properties, characteristics and semantic network of the construct itself. In particular we are very interested in the degree of association between PsyCap and employee performance. Previous research has found that PsyCap can be developed (Luthans, Avey & Patera, 2008), is related to

managerial rated performance and satisfaction (Luthans et al., 2007) and predicts positive emotions, intentions to quit and cynicism (Avey, Wernsing & Luthans, 2008).

Given the motivational propensity of PsyCap as fueled by the mechanisms of each component, we suggest that individuals high in PsyCap would be persistent in their effort to perform well (efficacy), derive the pathways to achieve goal attainment (hope), respond optimally after inevitable setbacks while pursuing in role performance (resilience) and maintain a positive expectation of success that enhances effort toward the successful outcome (optimism). Thus, we present our hypotheses:

Hypothesis 1: PsyCap will be positively related to manager rated performance.

Hypothesis 2: PsyCap will be positively related to objective performance outcomes.

Methods

Study 1

Sample. The sample for Study 1 consisted of 345 tellers of a very large banking firm which conducts business in Australia and New Zealand. Overall, the firm employed a total of 345 tellers across multiple branches. Of the 345 tellers 336 completed all data leading to a response rate of 97%. The firm is one of the 5 largest Australian banks, and the largest bank in New Zealand. Based in Melbourne, which is Australia's second largest city they operate in 30 countries, have 30,000 employees and assets of ~\$400 Billion AUD dollars. Participants were working directly in Melbourne, Australia at the time of participation. The majority of participants were Service Consultants (similar to bank tellers) (82%) with 12% being customer representatives, 3% being personal bankers, 2% sales consultants and 1% service quality. There

were 34 males and 311 females with an average of 5.8 years of tenure (s.d. 6.1) and an average age of 40.2 (s.d. 11.7). The organization did not share the data to determine to what extent this sample reflected the organization as a whole in terms of demography. However, the managers and HR professionals coordinating with the researchers indicated it was typical in terms of demographic composition.

Measures. The 24 item PsyCap questionnaire (PCQ) developed and psychometrically analyzed by Luthans and colleagues (2007) was used to assess individual PsyCap. This scale utilizes 6 items for each of the four dimensions of hope, efficacy, resilience and optimism. Sample items are: “I feel confident helping to set targets/goals in my work area” (self-efficacy); “Right now I see myself as being pretty successful at work” (hope agency); “If I should find myself in a jam at work, I could think of many ways to get out of it” (hope pathways); “When I have a setback at work, I have trouble recovering from it, moving on” (reverse scored resilience); and “ I always look on the bright side of things regarding my job” (optimism).

The subscales in this study (Efficacy = .86, Hope = .85, Resilience = .72, Optimism = .73) and the overall PCQ (.91) demonstrated adequate internal reliability. In addition to internal reliability, MPlus (version 4) software was used for a confirmatory factor analysis using maximum likelihood techniques. This CFA modeled PsyCap as a second order factor where each item loaded onto its dimension (e.g., Optimism items load on to a latent optimism factor) and each dimension loaded onto the overall PsyCap factor (see Luthans et al., 2007; Avey, Paterra & West, 2006; Avey, Wernsing & Luthans, 2008). Hu and Bentler (1999) describe the combinatorial rule that if the SRMR meets the cutoff criteria and the CFI or RMSEA meets the criteria then there is satisfactory model fit. They note the recommended cutoffs are a CFI \leq .95, RMSEA \leq .08 and SRMR \leq .06. This CFA demonstrated adequate factor analytic fit (SRMR =

.06, RMSEA = .05, CFI = .93.). In addition, item loadings for the 24 items ranged from .50 to .95 and there were no significant cross loaded items. Each dimension also loaded on the overall PsyCap factor as follows: efficacy = .74, hope = .98, resilience = .81 and optimism = .80.

Although previous research had performed multiple measurement model comparisons to ensure PsyCap was best measured as a second order factor model (e.g., Luthans et al., 2007; 2008), we again conducted a series of model comparisons for chi square difference tests. We compared the second order factor model described above to a model where each of the 24 items loaded on a single factor and a model where each of the components (e.g., hope, optimism, efficacy, resilience) did not load on the PsyCap factor. Consistent with previous research, the best model in terms of fit indices was the hypothesized model (SRMR = .06, RMSEA = .05, CFI = .93.) compared to the model with all 24 items loading on to one factor (SRMR = .07, RMSEA = .10, CFI = .79) and the model where each of the components (e.g., hope, optimism, efficacy, resilience) did not load on the PsyCap factor (SRMR = .06, RMSEA = .07, CFI = .91.). Chi square difference tests were consistent with the fit indices that the hypothesized model was the best fitting ($\Delta \chi^2 = 401.4, p < .001$ and $\Delta \chi^2 = 21.6, p < .001$ respectively).

In addition to PsyCap, both manager rated performance and referral performance was gathered. First, managers rated participant performance every 6 months with a single item on a scale from 1-4 taking into account financial performance, speed, teamwork and overall customer service. (It should be noted that in this case, the overall number of managers rating was unavailable however the organization indicated each manager had approximately 3-10 tellers.) A single rater (e.g., manager) was used in order to better understand the variance in managerial rated and less subjective performance. This rating was taken approximately 4-6 weeks after the PsyCap data were collected. This time was chosen for two reasons. First, Conley (1984) has

shown that individual difference constructs have a range of within person stability. For example, while general mental ability and personality showed almost perfect test-retest reliability (.99 and .98 respectively), what Conley terms self opinion constructs (such as PsyCap) are much less stable. When replicating this analysis, Luthans and colleague found that test-retest reliabilities of PsyCap were more stable than emotions and less stable than the Big 5 personality traits. Thus, we assert PsyCap will be less likely to have significant shifts in the 4-6 week time frame.

Second, given the argument presented in PsyCap research that sustainable effort is the reason for the link between PsyCap and performance, it is necessary to allow time for the effort to manifest in performance behaviors and results. Hence, the measure could not be taken immediately as there would not be time for PsyCap to affect performance. Nor could the performance measure be taken years later as shifts in PsyCap may negate the relationship. It should be noted that this concept of a state-trait continuum has been previously argued (e.g., see Avey, Luthans & Mhatre, 2008; Conley, 1984; Wright, 1997).

Referrals performance was listed by the organization as the most important performance metric for these employees given the revenue potential for each referral and was applicable to all jobs tested in the study. In sum, participants have been urged by their organization to “refer” clients to other internal services. For example, when a customer makes a deposit into a personal bank account, the service consultant may ask if they are interested in refinancing a home. The consultant then refers the customer to a home refinancing specialists who makes note of the referral. The referral variable operationalized in this study was a total number of referrals recorded after PsyCap was measured until the end of the quarter (approximately 6 weeks) and had an average of 7.5 referrals (s.d., 6.1).

Procedure. Each participant was sent an e-mail by their divisional leader requesting voluntary and anonymous participation in a study focused on employee motivation and performance. Participants completed the 24 item PsyCap instrument and demographic information electronically (web based). Subsequently, performance information for the entire division was provided by the company and aligned with the appropriate employee with randomly generated 7 digit ID numbers. Specifically, participants completed the PsyCap instrument and, after matching the data to the following performance rating, the names were removed from the dataset and replaced with this random code for privacy. Aggregate results were then provided to the organization.

Results. Means, standard deviations and correlations can be seen in Table 1. PsyCap was positively related to manager rated performance ($r = .34, p < .01$) stronger than for referrals ($r = .13, p < .01$) although both were significant. Although there were multiple variables significantly related to referrals including age, gender, tenure and PsyCap, the only study variable related to manager rated performance was PsyCap.

--Insert Table 1 Here--

In order to more fully understand the unique contribution of PsyCap on both performance outcomes, regression analyses were conducted. In the first regression model, the outcome of manager rated performance was regressed on age, gender and tenure. In step 2 of the regression, PsyCap was added to the model to see the extent that unique variance was predicted in manager rated performance. As seen in Table 2, when added to the regression model, PsyCap explained an additional 12% ($p < .001$) of the variance in the criterion and was a significant predictor in the regression model ($\beta = .35, p < .01$). Thus, we found support for Hypothesis 1 that PsyCap would be positively related to manager rated performance. Next, the same regression model was run

with referral performance as the criterion. Similar to the results in manager rated performance, PsyCap predicted an additional 2% ($p < .05$) of the variance in referral performance and along with tenure was a significant predictor in the regression model ($\beta = .14, p < .05$). Thus, we found support for Hypothesis 2 that PsyCap would be positively related to objective performance outcomes.

--Insert Table 2 Here--

Study 2

Sample. The sample for Study 2 was comprised of 109 franchisees which represented a 100% response rate of this group which was the total number of franchisees in the same firm as in Study 1. These franchisees are independent contractors who have contracted with the host firm to sell financial services including accounts, investments and home mortgages. The 100% response rate occurred as the study was initially announced to them at a mandatory meeting that occurred annually for all franchisees. Participants in Study 2 were working directly in Melbourne, Australia at the time of participation. All participants in this study held the same job title and had identical job responsibilities. Similar to Study 1, the organization did not share the data to determine to what extent this sample reflected the organization in terms of demographics. However, the managers and HR professionals coordinating with the researchers indicated the sample was typical in terms of demographic composition.

Measures. In this study there were concerns of anonymity by the participants and thus, limited demographic information was collected to alleviate this concern. Specifically, age and gender were not collected (as in Study 1), however tenure was. In addition to tenure, the same 24 item PsyCap questionnaire (PCQ) used in Study 1 was also used here. The subscales (Efficacy = .74, Hope = .74, Resilience = .77, Optimism = .73) and the overall PCQ (.89) demonstrated

adequate internal reliability. In addition to internal reliability, MPlus (version 4) software was again used for a confirmatory factor analysis. Using the same second order factor model determined superior in Study 1, this CFA also demonstrated adequate factor analytic fit (SRMR = .06, RMSEA = .07, CFI = .91.). Item and factor loadings were also similar to Study 1 yielding overall support for the psychometric properties of the instrument.

Beyond PsyCap and given the theoretical importance of extroversion in sales positions (Stewart, 1996), a 10 item extroversion instrument was added to Study 2 ($\alpha = .86$). Specifically, the instrument used was developed by Goldberg and colleagues (2006) and on a scale from 1 (not at all like me) to 5 (very much like me). Each scale includes 5 positive and 5 reverse coded items. Example items from the extroversion scale are “I make friends easily” and “I keep in the background.” Given that extroversion was measured with the same method as PsyCap and both were self report, we conducted a CFA to ensure there was measurement discrimination between the two variables. Specifically, when the extroversion items were kept as a separate factor the fit indices were SRMR = .08, RMSEA = .07, CFI = .80 and when extroversion the PsyCap items were combined to the same factor the fit indices decreased to SRMR = .12, RMSEA = .10, CFI = .65. In addition, chi square difference tests showed that keeping the items on separate factors was a better fitting model ($\Delta \chi^2 = 235.7, p < .001$). This, coupled with the correlation of .33 provides strong support for discriminant validity in terms of measurement for this study.

Beyond PsyCap and extroversion, similar to Study 1, outcomes variables of both manager rated performance and referral performance were gathered. The manager rated performance index was the same as used in Study 1. However, objective performance in this Study was the overall sales performance (in Australian dollars) of participants 6 months after the PsyCap and extroversion measures had been collected. This figure included all product sold by the franchisee

and ranged from less than 1 million to over 65 million AUD. Similar to Study 1, 6 months was chosen based on the apparent within person variability of PsyCap.

Procedure. Similar to Study 1, each participant was sent an e-mail by their divisional leader requesting voluntary and anonymous participation in a study focused on employee motivation and performance. As described prior, participants did voice concerns of anonymity and thus, demographic information was not requested in the data collection and each participant was assigned a randomly generated 7 digit ID number for data tracking and alignment.

Results. Means, standard deviations and correlations for Study 2 can also be seen in Table 1. Replicating the results of Study 1, PsyCap was positively related to manager rated performance ($r = .23, p < .05$). In addition, PsyCap was positively related to sales performance ($r = .24, p < .01$). An additional noteworthy correlation was the relationship between tenure and sales performance (see discussion section).

To delineate the unique contribution of PsyCap on both performance outcomes, regression analyses were conducted. Similar to Study 1, the first regression model included the outcome of manager rated performance regressed on tenure as well as the co-variate of extroversion (added in Study 2). Next, in step 2 of the regression model, PsyCap was added to understand the extent that PsyCap would predict unique variance in manager rated performance. As seen in Table 2, when added to the regression model PsyCap explained an additional 8% ($p < .001$) of the variance in the criterion manager rated performance and along with tenure was a significant predictor in the regression model ($\beta = .31, p < .01$). Thus, replicating Study 1 we found support for Hypothesis 1 that PsyCap would be positively related to manager rated performance. Next, the same regression model was run with sales performance as the criterion. Again replicating and extending results in Study 1, PsyCap predicted an additional 6% ($p < .01$)

of the variance in sales performance and along with tenure and extroversion was a significant predictor in the regression model ($\beta = .28, p < .01$). Thus, we found support for Hypothesis 2 that PsyCap would be positively related to objective performance outcomes.

Discussion

The core purpose of these studies was to test the underlying proposition in the positive POB domain that positive individual capacities may be related to employee performance in the workplace. Results from these two field studies suggest that PsyCap is associated with higher levels of manager rated performance, customer referrals (as an objective performance criterion) and sales performance. More specifically, Study 1 suggests that bank employees who reported higher levels of PsyCap were later rated by their managers as demonstrating higher in role performance. This positive relationship between PsyCap and performance was also evident in more objective measures of performance; however the strength of the relationship was much lower than in manager rated performance. This suggests that there are substantially more factors that go into customer referrals than PsyCap alone; however PsyCap was a significant predictor.

In Study 2 the relationship between PsyCap and manager rated performance was replicated; however the relationship between PsyCap and sales (more objective) performance was significantly stronger than in Study 1. Results here suggest PsyCap may be more related to sales performance than customer referral performance in bank employees. This distinction is important as the nomological net of PsyCap continues to be explored.

An additional point of discussion is the inclusion of extroversion as a co-variate in Study 2. Results suggest that the personality trait of extroversion is positively related to sales performance and not manager rated performance in this study. It is important to note that PsyCap predicted significant variance in performance above and beyond the personality trait of

extroversion, suggesting not only discriminant validity between extroversion and PsyCap but also emphasizing the unique role that positive PsyCap may play in employee performance in certain contexts.

Although not a focus of the study we note that in Study 1, age and PsyCap were significantly related in a negative direction. This may be a topic for future research as no previous studies have investigated the link between demographic variables and PsyCap as a core construct. Just as Waldman and Avolio (1986) have showed the relationship between age and performance is complex and includes multiple contingency factors, the relationship between age and PsyCap may be the same.

As evident in Tables 1 and 2, there was an interesting pattern of the strength of relationships that emerged. First, managerial rated performance was higher in Study 1 than in Study 2. This could be due to the different division of the company or may be due to the timing of the data collection. In Study 1, performance data were collected 4-6 weeks after PsyCap, whereas in Study 2, it was collected 6 months later. Thus, it is possible that PsyCap at Time 1 contributes to performance oriented behaviors sooner (4-6 weeks) and less as time goes on (6 months). This would explain why the relationship between PsyCap and supervisory performance was stronger in Study 1. Further, PsyCap was more related to objective performance in Study 2 (6 month time separation) than in Study 1. There emerges three logical explanations for this; PsyCap is more related to sales (Study 2) than referrals (Study 1), PsyCap was more related to objective performance in Study 2 due to a contextual issue not measured in the study or it may be that PsyCap contributes to performance behaviors and it takes more time for those behaviors to end up in positive resulting performance (sales) than the behaviors themselves. In sum, it may be that PsyCap affects effort sooner (4-6 weeks) and affects performance results later (6 months).

This would explain why there was such a small variance explained in referral performance in Study 1 and stronger sales performance in Study 2. However, given the confounds in this study future research must be initiated to examine this position.

A final point of discussion is the measurement properties and confirmatory factor analytic fit of the PsyCap instrument. In both Study 1 and Study 2 the CFA revealed strong factor analytic fit replicating earlier work (e.g., Avey et al, 2008; Luthans et al, 2007). In addition to discriminant validity and strong internal reliability, results suggest that the 24 item PsyCap instrument continues to be a psychometrically valid approach to measuring positive PsyCap.

Limitations and Future Research

As Podsakoff, MacKenzie, Lee and Podsakoff (2003) lament, there has been a strong reliance on cross sectional common method and common source research designs. In this study, we used multi-source (e.g., employee rated predictors and manager rated criterion) and multi-method (manager and employee survey ratings, customer referral data and sales data) data to test hypotheses. This aspect of the research design reduces the issues of both common source and common method bias in the data. A second strength was the replication and convergence of results across two studies. By replicating the results there is stronger evidence for external validity in the findings that there may be a relationship between PsyCap and performance across multiple contexts.

Despite methodological strengths, it should be noted that this study was cross sectional in nature, despite a temporal separation between the predictors and criterion, a case could be made for reverse causality. For example, it may be, per Bandura's (1997) theory of self efficacy, after a successful performance an employee may have enhanced self efficacy. This may be followed by enhanced performance which may cause even more increased efficacy. Thus, overall, it

cannot be determined if the enhanced performance or PsyCap (which has a component of self efficacy) came first. Thus, future studies will include the use of both causal and longitudinal designs to better explicate the nature of the PsyCap and performance relationship.

In addition, extant research in managerial psychology has found multiple predictors of employee job performance. In this study, we did not collect data that would allow us to make comparisons of PsyCap versus other predictors of performance in order to determine the most useful or dominant predictor of performance. Thus, the study is limited in that PsyCap may not be causing performance but rather a third unmeasured variable drives performance and simply covaries with PsyCap. Future studies should include multiple predictors of employee performance in order to isolate the effects of PsyCap on performance.

An additional limitation of this study is the lack of accounting for context. Mischel (1968; 1977) has argued individual differences should matter more in weak situations when behavioral cues are less well known than strong situations when behaviors are prescribed. This was also empirically observed by Barrick and Mount (1993) when analyzing the Big 5 personality traits and employee performance. Thus, future research should also consider the role of context on this relationship. Particularly, when should PsyCap be more related to performance and when is it less relevant.

It should also be noted that managerial ratings of performance and sales performance were very highly correlated arguably to the point of colinearity. This suggests that in terms of performance criteria, the dependence in the data (e.g., managers using sales data to make supervisory assessments of performance) yielded a very strong influence in the overall assessment. Thus, the two indices of performance did not appear to be independent. This is logical considering an essential job function of a sales employee is to make sales. Managers

would be aware of which employees were selling the most and consequently this information will (and arguably should to some extent) affect their ratings of performance.

A final limitation to be noted was the limitations of the single index of managerial rated performance. As stated in the introduction, research by Bommer and colleagues (1995) suggests managers alone are not optimal at rating employee performance. A single item measure of performance compounds this issue as one would expect significant error in the measurement. While this study was more designed to examine performance not rated by the supervisor, future research should integrate multiple item measures of performance across appropriate dimensions for the specific job in context.

Implications and Conclusion

There are primarily three implications for managers of/and organizations based on the results of this study. First, it may be beneficial to target PsyCap in developmental interventions. Luthans and colleagues (2008) have found that PsyCap can be developed in employees with a 2-3 hour web-based intervention. Given that PsyCap is associated with employee performance, the development of PsyCap by organizations may enhance overall performance of their employees.

A second implication has to do with metrics. More specifically, Becker, Huselid and Ulrich (2001) argue that HR metrics such as those that predict employee performance are best understood as “leading indicators” as they predict what will happen in the future as opposed to financial indices (e.g., annual report) which informs what has happened in the past. Measuring employee PsyCap may potentially be a component of an HR scorecard that informs organizations of the vitality, psychological health and anticipated future performance of the organization.

A third and final implication has to do with selection batteries. Typically selection batteries are associated with “trait-like” or stable individual differences such as general mental ability, conscientiousness or neuroticism. In this case, given that previous research has suggested a positive relationship between PsyCap and other traits like individual differences (e.g., core self evaluations; Luthans et al, 2007), and results here show a positive relationship between PsyCap and both subjective and objective performance; it stands that PsyCap may be of some utility in selection batteries for organizations. Thus, organizations may select and retain those candidates who are pre-dispositioned to be higher in PsyCap and subsequent performance.

Overall, the integration of positive psychology and organizational behavior continues to flourish. We have demonstrated here that PsyCap is associated with multiple measures of employee performance across two field studies. In conclusion, empirical research in POB is likely to advance to the boundaries of the theory including how PsyCap manifests across multiple contexts, bio-data predicting PsyCap and multi-level issues such as team, group, organizational and even cultural PsyCap.

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Table 1- Means, Standard Deviations and Inter-Correlations among Variables

Study 1	Mean (s.d.)	1.	2.	3.	4.	5.
1. Age	40.28 (11.7)					
2. Gender ¹		.35**				
3. Tenure	5.81 (6.12)	.66**	.25**			
4. PsyCap	4.56 (.55)	-.16*	-.05	-.17*	(.91) ²	
5. Manager Rated Performance	2.84 (.57)	-.01	.03	.02	.34**	
6. Referral Performance	7.48 (6.12)	.12*	.12*	.16*	.13*	.26**
Study 2		1.	2.	3.	4.	
1. Tenure	2.75 (.99)					
2. Extroversion	4.55 (.73)	-.15				
3. PsyCap	4.53 (.37)	.04	.33**	(.89) ²		
4. Manager Rated Performance	1.98 (.85)	.37**	-.03	.23*	(.86) ²	
5. Sales Performance	10,878,872.51 (9,844,049.43)	.45**	.19*	.24*	.77**	

* p < .05

** p < .01

¹ Gender was dummy coded with 1 = male and 2 = female² Cronbach reliabilities in diagonals where applicable

Table 2- Regression Model with PsyCap Predicting Performance Outcomes

Study 1				
	Manager Rated Performance		Referral Performance	
	Step 1	Step 2	Step 1	Step 2
Age	-.04	-.01	.01	.02
Tenure	.03	.07	.12	.13*
Gender ¹	.03	.02	.08	.08
PsyCap		.35**		.14*
Total R ²	.00	.12**	.03*	.05*
Δ in R ²		.12**		.02*

Study 2				
	Manager Rated Performance		Sales Performance	
	Step 1	Step 2	Step 1	Step 2
Tenure	.37**	.39**	.43**	.40**
Extroversion	-.01	-.12	.16	.23*
PsyCap		.31**		.25**
Total R ²	.14**	.22**	.22**	.28**
Δ in R ²		.08**		.06**

* p < .05

** p < .01

¹ Gender was dummy coded with 1 = male and 2 = female