Psychological capital at the individual and team level: Implications for job satisfaction and turnover intentions of emergency services volunteers.

Background literature

The concept of Positive Organisational Behaviour (POB) was introduced as a way to formally integrate positive psychology to the workplace arena (Avey, Luthans & Youssef, 2010). POB has been defined as “the study and application of positively oriented human resource strengths and psychological capacities” which meet criteria showing they “can be measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002b; p54). POB is differentiated from the general area of positive psychology because it emphasizes predictors of workplace performance positioned as state-like strengths that can be developed at an individual, group or organisational level (Luthans, 2002b).

Since the inception of POB, early last decade, several positive psychological capacities have been examined both conceptually and empirically for inclusion in the POB framework. To date, those deemed to best fit the POB inclusion criteria are self-efficacy, hope, optimism, and resiliency (Luthans, Youssef, Avolio, 2007). While each of these positive psychological constructs has been studied individually for their POB potential (see Luthans, Youssef, et al., 2007 for a full review of these studies), substantially more attention has been devoted to a higher order core construct, known as Psychological Capital, or PsyCap.

In its simplest form, PsyCap can be understood as “who you are” and “what you can become in terms of positive development”. More specifically, PsyCap is defined as “an individual’s positive psychological state of development that is characterised by:

1) Self Efficacy - having confidence to take on and put in the necessary effort to succeed at challenging tasks;

2) Optimism - making a positive attribution about succeeding now and in the future
3) **Hope** - persevering towards goals and, when necessary redirecting paths to goals; and

4) **Resiliency** - when beset by problems and adversity, sustaining and bouncing back and even beyond to attain success” (Luthans, Youssef, et al., 2007, p3).

These four dimensions are considered to meet the criteria for POB in that they are each positive, unique, developable, measurable and performance-related (Luthans & Youssef, 2004). Confirmatory factor analyses have consistently demonstrated support for a core underlying factor whereby the shared variance or commonality between each facet comprises the higher order factor, PsyCap (Avey, Wernsing & Luthans, 2008; Avey, et al., 2010; Culbertson, Fullagar & Mills, 2010; Luthans, Avey, Avolio & Peterson, 2010; Luthans, Avey, Patera, 2008b; Luthans, Avolio, Avey & Norman, 2007).

The benefits of this higher order construct of PsyCap in contemporary organisational settings have been demonstrated in an emerging, yet growing body of research (for a more detailed review see Youssef & Luthans, 2010). For instance, it has been found that overall PsyCap consistently produces higher correlations with performance outcomes than any of its individual components by themselves (Luthans, Avolio, Avey & Norman, 2007; Luthans, Avolio, Walumbwa & Li, 2005). Thus, it is suggested that PsyCap appears to have a synergistic effect, whereby the whole (PsyCap) may be greater than the sum of its parts (i.e. efficacy, hope, optimism and resiliency; Luthans, Youssef, et al., 2007). Moreover, PsyCap has been shown to be a developable resource with several empirical studies demonstrating the utility of PsyCap interventions (Luthans, Avey, Avolio, Norman & Combs, 2006; Luthans, Avey & Patera, 2008b; Luthans, Avolio, Avey & Norman, 2007).

A recent meta-analysis of 51 research samples also showed significant relationships between psychological capital and employee attitudes such as job satisfaction, commitment and turnover intentions and employee behaviours such as citizenship behaviour and job performance (Avey, Reichard, Luthans, & Mhatre, 2011).
The extant PsyCap literature has focused almost exclusively on assessment and development of PsyCap at the individual level. However, given that work teams are becoming increasingly important to both organisational structure and success; with 83 percent of managers identifying teams as a key ingredient to their organisations’ success (CCL, 2006), a small number of studies have begun to examine the potential of a group or team level version of the construct. As teams are a type of work group that has a certain level of interdependency that enables the achievement of collective goals, it is theorized that team members are exposed to emotional contagion processes whereby a collective form of psychological capital is developed. Similar processes have been demonstrated with team affect (see Totterdell, 2000; Totterdell, Kellett, Teuchman & Briner, 1998). Like organizational social capital, a collective construct reflecting the quality of social interactions such as shared trust (Leanna & van Burren, 1999), team-level psychological capital can be an important organizational resource if managed effectively.

In a recent review of PsyCap literature, Dawkins and Martin (2011) highlight four studies that have attempted to examine the relationship between PsyCap at the team level and team functioning and performance (Clapp-Smith, Vogelgesang & Avey, 2009; Petersen & Zhang, 2011; Walumbwa, Luthans, Avey & Oke, 2011; West, Patera & Carsten, 2009). Each of these four team level PsyCap studies is now briefly reviewed.

West, et al (2009) studied the relationship between team PsyCap and various team-level outcomes among college student teams. By implementing a referent-shift version of the PsyCap Questionnaire (PCQ; Luthans, Avolio & Avey, 2007), whereby the target of each item was the team rather than the individual, the study demonstrated that team PsyCap was significantly related to team level measures of cohesion, cooperation, coordination, conflict and satisfaction. Clapp-Smith, et al (2009) investigated collective PsyCap among teams of retail employees to determine a relationship between team level PsyCap and sales performance. Specifically, it was found that trust in management mediated the relationship between team level PsyCap and team performance. A third study, conducted by Walumwa et al (2011), lent further support for the
aggregation of PsyCap to the team level by implementing a brief referent shift version (eight items) of the PCQ with 146 teams from the financial sector. The study demonstrated a significant relationship between team PsyCap and team level performance and citizenship behaviors. Furthermore, team level PsyCap was also found to play a mediating role in the relationship between authentic leadership and team outcomes. Finally, Petersen and Zhang (2011) investigated collective PsyCap among 67 top management teams and found that the collective PsyCap of top management teams (TMT) was positively related to business unit performance. Moreover, the relationship between collective PsyCap and unit performance was strengthened when the team was headed by a transformational leader.

These studies provide some initial evidence for a collective PsyCap construct, although there are some limitations to be noted, some of which are addressed in the current study. For instance, two of the studies (Walumbwa, et al., 2011; West et al., 2009) have only examined partial aspects of PsyCap using the modified versions of the PCQ. Specifically, West et al (2009) was a pilot study using a student sample and only included three of the four constructs of PsyCap in their analysis (for reasons unknown, the study omitted the hope component from analyses). Furthermore, the Walumbwa et al (2011) study implemented a substantially condensed version of the PCQ, including only eight of the 24 PCQ items. The current study undertakes an investigation into team-level PsyCap within a field setting and applies the full four-factor PCQ in its entirety.

All four of the extant team level PsyCap studies have looked only at team level outcomes such as team performance, team cohesion, team conflict etc. Despite calls for multi-level PsyCap research:

"Levels of analysis need to also be carefully considered ... considerable cross level potential is still untapped ... research should take into account not only the co-presence of various levels of analysis but also interaction across the levels" (Yousef and Luthans, 2011, p 358)

there has been no exploration of how team-level PsyCap may be associated with individual level outcome measures important to organisations, including job satisfaction and turnover intentions.
Consequently, this paper aims to build upon the emerging team level PsyCap literature by differentiating between individual and team level PsyCap in relation to their impact on individual level job satisfaction and turnover intentions. Based on previous PsyCap research at both the individual (i.e. Avey, Luthans & Jensen, 2009; Avey, Luthans & Youssef, 2010; Hmieleski & Carr, 2007; Larson & Luthans, 2006) and team levels (i.e. West et al., 2009), it was specifically hypothesized that:

1. individual level PsyCap will explain variance in job satisfaction and turnover intent; and
2. team level PsyCap will explain additional variance in job satisfaction and turnover intent.

As any interaction between individual and team-level PsyCap and employee attitudes has not yet been examined, we also aim to examine whether any interaction between levels is observed. Interactions between individual and team level variables have been observed in other literatures such as empowerment and wellbeing (Siebert, Silver, & Randolph, 2004). Hence, we also hypothesized that:

3. the interaction between individual and team level PsyCap will explain additional variance in job satisfaction and turnover intent.

Method

Sample & Procedure

The sample was drawn from a large Australian state public sector organisation with a large workforce of volunteers, using a random selection of approximately 60 percent of the organisation’s operational units. The survey was anonymous and voluntary. 592 emergency services volunteers, from 87 teams took part in the overall study. Teams were defined according to the locality group to which volunteers belonged and consisted of a minimum three members following criteria outlined in previous team level research (Ambrose & Schminke, 2003, Salanova, Agut & Peiro, 2005; Schminke, Cropanzano, Rupp, 2002). Consequently, 29 teams (representing 41 volunteers) were deleted due to insufficient team numbers (n=<3). Further listwise deletion of volunteers with missing or incomplete data (n = 36) resulted in a final usable
sample of 508 volunteers from 58 teams, with a mean team size of 9. This sample represented a 28 percent response rate (range 6.4-87.5 percent) of the 1845 volunteers from these units. Of all respondents 64.9 percent were aged over 40; 56.3 percent were males; 47.1 percent had less than five years volunteering experience; 51.1 percent had been with the organisation for less than five years; and, 61.5 percent were in paid employment (full/part-time) with another organisation.

Measures

Volunteer demographic information was collected via standard self report questions. Age and gender were utilized as control variables given previous PsyCap was measured with the 24 item measure developed by Luthans, Youssef & Avolio (2007). There are four, six item subscales and each item is measured on a 6 point likert scale assessing the extent of agreement with positive statements about how the individual approaches their work e.g. There are lots of ways around any problem” and “I feel confident in helping to set goals in my work area”. This instrument has demonstrated strong psychometric properties in confirmatory factor analyses in multiple studies (Luthans et al., 2005; Luthans, Avolio, Avey, Norman, 2007) and acceptable internal reliability was demonstrated in this study ($\alpha = .92$). Whilst to our knowledge, the PCQ has not been implemented in a sample of volunteers before, face validity of the measure to the volunteers was assessed as adequate using an informal pilot.

In order to capture a measure of team PsyCap, an additive composition model was implemented whereby team PsyCap was calculated by averaging the PsyCap scores of individual members in each team. The additive model has been used in previous research assessing justice climate level within work teams (Colquitt, Noe & Jackson, 2002).

Dependent variables reflected individual level volunteer work attitudes. Job satisfaction was measured using a single item about whether the person was satisfied with the job utilizing a 5-point agreement anchored likert scale (as discussed in Nagy, 2002). Volunteer turnover intentions were measured using two items adapted from Farmer and Fedor (1999) also utilizing a
5-point agreement anchored likert scale. This measure demonstrated acceptable internal reliability ($\alpha = .70$).

Results

Means, standard deviations and inter-correlations among the variables were calculated and are presented in Table 1. Hypotheses were tested using two hierarchical regressions, the results of which are reported in Tables 2 & 3. Two regressions for each of the dependent variables of job satisfaction and turnover intentions were conducted. In both regressions, step one consisted of control variables age and gender; step two was individual level PsyCap. Step 3 was team level PsyCap. Step 4 was the interaction variable (both variables centred and a product term created). A stepwise procedure was employed so that any unique variance contributed by each of the individual and team level variables over and above controls could be examined.

The results for the regression on job satisfaction showed that a significant amount of variance (9.2%) was explained by individual level PsyCap, and for the interaction between individual and team level PsyCap (an additional 1%). Figure 1 shows the interaction graph indicating that the effect of individual PsyCap on job satisfaction is greater when team PsyCap is high and reduced when team PsyCap is low. No significant effects were found for the controls or team-level PsyCap. The results for turnover intentions revealed that a significant amount of variance (13%) was explained by individual level PsyCap only.

Discussion

The aim of this study was to simultaneously examine the unique variance explained by both individual and team-level PsyCap in relation to individual level outcomes. The first hypothesis was supported in that individual level PsyCap was significantly associated with both job satisfaction and turnover. The second hypothesis was not supported as team level PsyCap was not a significant predictor of either of the dependant variables. The third hypothesis was partially supported as an interaction between individual and team level PsyCap was observed for job satisfaction, showing that high levels of team PsyCap enhanced the effect of individual level
PsyCap on job satisfaction and lower levels of team PsyCap reduced this effect. However, this effect was very small and could be considered statistically trivial.

The main effects of individual level PsyCap on individual level work attitudes are consistent with the existing literature (Avey et al., 2011). Whilst team level PsyCap has been shown to explain significant variance in team level outcomes (Clapp-Smith et al., 2009; Waumbwa, et al., 2011; West et al., 2009), our results did not show any evidence of a cross level main effect of team PsyCap on individual level work attitudes. However, the presence of a small but statistically significant interaction effect shows that team-level PsyCap does play a role in the relationship between individual PsyCap and job satisfaction. This research builds upon previous team level PsyCap research in its investigation of the relationship between collective PsyCap and individual-level outcomes deemed important to organisations and workers alike, namely job satisfaction and turn-over intentions. In addition, this study also extended previous research by assessing team PsyCap with the PCQ in its entire, psychometrically validated version and broadened the sampling parameters for PsyCap research by examining volunteer workers.

In relation to the non-significant findings for team level PsyCap we propose a number of considerations. A “publication bias” for significant findings can limit the potential for critical analysis of construct validity, particularly in an emerging field of enquiry. Rego et al. (2010, p. 1533) remind us that:

"if the logic of science is to search for refutability and falsification (Popper, 1972), a contra-theoretical result may be as valuable as a supportive one";

and Youssef and Luthans, originators of the PsyCap construct (2011, p 358) explain:

"even though some studies may yield no statistically significant findings, especially at restricted ranges of PsyCap, such findings may indicate the existence of thresholds, saturation points, trigger points or other discontinuities that the sampling approach utilized may have missed. These discontinuities are worth studying in and of themselves for a better understanding regarding the role of positivity and the contribution of PsyCap in the workplace in particular"
The results of our study may be due to the sampling of volunteers rather than paid employees. Indeed a restriction in range for team level PsyCap may have also contributed to non-significant findings.

Limitations & Future Directions

Some methodological limitations of this paper need to be acknowledged. Firstly, the use of single and two-item measures for job satisfaction and turnover intent respectively has reduced the level of psychometric rigour in the measurement approach. The variables reported in this paper were part of a much larger study with a broader research focus. Accordingly, some measures were selected simply to provide a snapshot of volunteers’ perceptions rather than the substantive variables for investigation. Future research investigating the relationships found in this study should employ more comprehensive assessment of outcome variables.

Secondly, it should be noted that this study has implemented the most basic method of aggregation to compute team PsyCap. We were limited in the method of aggregation that we could implement due to the purposes of the larger study i.e. a referent shift measure was not available. As such, the findings reported in this study should be considered as exploratory and as providing an elementary example of how team PsyCap may relate to individual outcomes. Future research should consider other means of team level aggregation, such as the referent shift model which allows for examination of a construct in direct relation to the team, rather than providing an average of individual perceptions (Chan, 1998; West et al., 2009). Other compositional models such as the dispersion model (Chan, 1998) which assesses variability in team members ratings of the construct of interest, and other associated criteria for aggregation statistics such as Intra Class Correlation Coefficients 1 & 2 and rwg indices have not been considered. Alternative methods of analysis such as multi-level modeling using programs such as hierarchical linear modeling (HLM) could also be employed.

Thirdly, we are aware that our average team response rate (28 percent) raises concerns regarding the representativeness of the sampled teams. Low response rates are a commonly cited
limitation in team level research (Clapp-Smith et al., 2009; Tse, Dasborough, Spears & Ashkanasy, 2008). Given the voluntary nature of field research, complete or near complete team response rates, as are frequently cited in laboratory studies (Colquitt, et al., 2002; Naumann & Bennett, 2002; Naumann & Bennett, 2000; West, et al., 2009), are virtually unfeasible. Indeed, Maloney, Johnson and Zellmer-Bruhn (2010) have noted recently that obtaining full response rates from teams is nearly impossible or may require unethical means to obtain. However, adequate response rates are important in multilevel research (Bliese, 2000) and as such, future team PsyCap researchers should strive to facilitate more representative team response rates.

Implications for organisations

The results suggest that in addition to performance improvement, psychological capital interventions (PCI) may also have benefits for employee satisfaction and retention. Retention of volunteer labour is also a significant objective for the emergency services department studied here, and strategies to develop psychological capital may be implemented for such purposes, especially considering the return on investment documented in PCI studies published to date (Luthans, Avey, Avolio, Norman & Combs, 2006; Luthans, Avey & Patera, 2008b; Luthans, Avey et al., 2010). The PsyCap intervention has been informed by both theory (e.g. Bandura, 1997; Carver & Schier, 2002; Masten & Reed, 2002; Snyder, 2000) and existing intervention guidelines (e.g. Bandura, 2000; Coutu, 2002; Selgiman, 1998; Snyder, 1994; Stajkovic & Luthans, 1998b).

Our finding that a team high in psychological capital in a collective sense may further enhance the relationship between individual PsyCap and job satisfaction suggests there may be additional benefits of boosting PsyCap via intervention that function in a synergistic manner. Individual team members are influenced by the psychological states of other members (Tanghe, Wisse & van der Flier, 2010) and hence teams may become similar in their affective states. Such an effect has been demonstrated previously among team members in regard to mood and
importantly has demonstrated how team affect can subsequently affect performance (Totterdell et al., 1998; Totterdell, 2000).

Conclusions:

This paper aimed to build upon the emerging team level PsyCap literature by examining the potential for cross level effects of team PsyCap on individual outcomes. Despite a number of limitations outlined above; the preliminary analysis provided demonstrated little support for team level PsyCap as a direct predictor of the job satisfaction and turnover intent of volunteer emergency services workers, although an interaction between the team and individual level constructs was observed. These findings, along with findings from previous team level PsyCap research (i.e. Clapp-Smith et al., 2009; Walumbwa, et al., 2011; West et al., 2009) provided further the impetus for the examination of multi-level conceptualizations of PsyCap and further investigation of the effects of interventions on individuals and team outcomes.

References


Table 1. Means, standard deviations and inter-correlations among study variables.

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<tr>
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<td>.149**</td>
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*p < .05 (two-tailed) ** p < .01 (two-tailed)

Table 2. Results of Hierarchical Regression Analyses for Job Satisfaction

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<td>Age</td>
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Step 2 Model Summary

| Gender | -.04 | .02 |
| Age | .01 | .07 |
| Individual level PsyCap | .30*** | .06 |

Step 3 Model Summary

| Gender | -.04 | .02 |
| Age | .01 | .07 |
| Individual level PsyCap | .31*** | .06 |
| Team level PsyCap | -.01 | .11 |

Step 4 Model Summary

| Gender | -.05 | .02 |
| Age | .01 | .07 |
| Individual level PsyCap | .31*** | .06 |
| Team level PsyCap | .01 | .11 |
| Interaction ind x team | .12** | .21 |

* p< 0.05; ** p< 0.01; *** p< 0.001; standardized beta weights.
Table 3. Results of Hierarchical Regression Analyses for Turnover Intentions

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* \( p < 0.05 \); ** \( p < 0.01 \); *** \( p < 0.001 \); standardized beta weights.
Figure 1. Interaction between individual and team level PsyCap for job satisfaction.