Positive Psychological Capital as a Source of Sustainable Competitive Advantage for Organizations

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Abstract: Psychological capital (PsyCap) has gained prominence as an important construct in leadership research. Comprising four factors (self-efficacy, hope, optimism, and resiliency), PsyCap is considered to be a vital factor for authentic leadership development and influence. The current study reports the results of a questionnaire survey that was conducted in the construction industry of Singapore. The survey explored the correlations of PsyCap with authenticity, leadership, and leadership outcomes. The results show that PsyCap significantly correlates with authenticity and transformational leadership. It was also found that transformational leadership plays a mediating role for PsyCap to predict leadership outcomes (effectiveness, extra effort, and satisfaction). The discussion in the paper also considers the implications of PsyCap for leadership development and effectiveness in general and in the context of the construction industry.

Introduction

Researchers have placed much emphasis on human capital (O'Leary et al. 2002) and social capital (Adler and Kwon 2002) as viable sources of competitive advantage for organizational success. However, rooted in the movement of positive psychology and positive organizational behavior (POB), recent developments in organizational studies have focused on "positively oriented human resource strengths and psychological capacities that can be measured, developed, and managed for performance improvement in today's workplace" (Luthans and Youssef 2004, p. 152). These psychological capacities are termed as "psychological capital" or, in short, "PsyCap" (Luthans et al. 2007b). Proponents of PsyCap argue that its development at all levels of organizations has a high potential as an important human resources management strategy for helping the firms to capitalize on their existing and prospective human resources [see Luthans and Youssef (2004); Luthans et al. (2005, 2007b)].

Originally presented by Luthans and colleagues, PsyCap fulfills the criteria to be a viable option for organizations to leverage sustainable competitive advantage for organizational success (Luthans and Youssef 2004; Jensen and Luthans 2006). The growing body of knowledge on the subject has not only necessitated more research but also real-time testing to explore the practical implications of the construct for organizational development. Proponents of PsyCap believe that the human resources are not just paid personnel; rather, they are an indispensable asset that an organization can truly capitalize on if they are properly managed and trained to be psychologically healthy (Luthans and Youssef 2004).

Extant research supports that for organizations to develop and sustain competitive advantage, human resource strategies should be formulated considering the factors that are highly unique and valuable, context specific, cumulative, renewable, hard to imitate, and nonsubstitutable (Luthans et al. 2007b; De Saá-Pérez and Garcia-Falcon 2002). Therefore, in addition to providing better monetary compensations, the firms need to invest in human resources in a more innovative manner. They should manage their talent and train the professionals to be better leaders and followers who are inspired to think innovatively, possess positive psychological capacities, and have the highest sense of authenticity to contribute to the achievement of the organizational objectives. For this purpose, firms need to develop positive psychological capacities among their employees, both followers and leaders.

Construction is a project-based industry in which activities are short term, fast track, dynamic, complex, and prone to high risks in a turbulent operating environment (Hillebrandt 2000). Consequently, many jobs in construction are also project based, and this may lead to higher performance pressure within a short period and higher job stress resulting in low organizational citizenship and high turnover. Sociopolitical and environmental forces on construction projects may also exacerbate the pressure in the jobs. In many countries, construction is also typified by an antagonistic environment, a tough culture, and involvement of large number of stakeholders. Project delays and cost overruns are also common [see Toor and Ogunlana (2008)].

Due to the project-based nature of construction, employees feeling self-efficacious in their previous projects might not necessarily be self-assured in their new projects. Similarly, depending upon the project environment, their level of optimism about achieving the project objectives might also vary from project to project. Sometimes, pressure from the client and other stakeholders can lead to changes to the scope, which may result in delays

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or even termination of projects. This may lead to pessimism and frustration among some employees over the perpetual state of pressure in construction. Thus, construction practitioners are not only constantly working under pressure on projects to achieve certain deadlines and meet other particular objectives but also operate in an atmosphere of uncertainty in which many unforeseeable factors can have major impact on their activities and their results. Hence, it is important that proactive developmental efforts are made to augment and stabilize the psychological capacities of employees to prepare them for the challenging tasks which they typically face.

PsyCap is a fresh but theoretically robust notion, with a great promise and research potential. There is support in the literature that PsyCap is potentially an important human resource asset for any business organization. Given the growing body of knowledge on the subject, it is pertinent to undertake more research on it, as well as performing real-time testing to explore the practical implications of the construct for organizations.

Research Objectives

The focus of this paper is to examine:
1. How PsyCap relates to authenticity of leaders;
2. How PsyCap and various forms of leadership (transformational leadership, transactional leadership, and laissez-faire leadership) are associated; and
3. How PsyCap influences various leadership outcomes, such as effectiveness, extra effort, and satisfaction.

PsyCap

The foundations of PsyCap lie in POB (Luthans 2003; Luthans and Youssef 2004; Youssef and Luthans 2007a,b). POB 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" (Luthans 2002, p. 59). Drawing from POB, Luthans et al. (2007a,b, p. 3) defined PsyCap as the "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." These definitions show that PsyCap has four main components or psychological capacities: self-efficacy, optimism, hope, and resiliency. Luthans et al. (2007b) argued that for any positive psychological capacity to become a part of the PsyCap, the following criteria must be met:
1. It should be positive and relatively unique to the field of organizational behavior;
2. It should fulfill the scientific criteria of being theory and research based (that means it should have a substantial theoretical and research background);
3. It should be measurable (with the help of some tool such as a questionnaire);
4. It should be statelike (that means the capacity is not hard wired—or traitlike—or static in nature) and therefore can be developed with certain interventions; and

5. It should be related to work performance outcomes (it should have some positive influence on sustainable work performance).

Luthans et al. (2007b) also discussed some other candidate social capacities (such as gratitude, forgiveness, emotional intelligence, and spirituality) as well as some higher-order strengths (such as authenticity and courage). Luthans et al. (2007a) noted that PsyCap is a core construct that predicts performance and satisfaction better than any of the individual strengths that make it up. In their study of Chinese workers, Luthans et al. (2005) ascertained significant correlation of positive PsyCap with their performance that was rated by their supervisors. Luthans et al. (2006) also claimed that relatively short interventions—or what they call microinterventions—can lead to increase in PsyCap. The next section discusses the potential of PsyCap as a source of sustainable competitive advantage.

Competitive Advantage of PsyCap

Earlier research has shown support for human capital—that emphasizes developing personal capacities and skills ("what you know"). On these lines, researchers argue that successful organizations attract, engage, develop, and retain the best and brightest employees and hence possess strong human capital (Wright and McMahan 1992; O'Leary et al. 2002). Others argue that social capital—that emphasizes social relations, networks, and connections ("who you know")—is important for organizations as it helps to leverage more information and results in more influence, control power, and organizational solidarity [see Adler and Kwon (2002)]. It has also been argued that social capital contributes to the creation of human capital and is important for creating sustainable competitive advantage (Luthans and Youssef 2004). Snell (2002, p. 64) argued that the human resource function should treat human capital and social capital equally because management of human capital is important for "building a foundation for effectiveness," whereas management of social capital is the key for the "finished product."

However, in addition to having human capital and social capital, an organization needs to be psychologically healthy to be competitive. In this term, PsyCap has several advantages at all levels including employees, leaders, and organizations at large. Proponents of PsyCap argue that it challenges the individuals to explore the question of "who you are" (Luthans and Youssef 2004) and therefore results in better self-awareness that is fundamental to leadership development and influence. Luthans et al. (2005) argued that developing PsyCap in employees is not only beneficial for an organization but also difficult to replicate by the organization's contenders. Positive PsyCap management possesses the capability to effectively channel and grow employees' talents, strengths, and potentials and help the organization to attain a long-term competitive edge.

A positive psychological state can energize employees' cognitive processes and their perceptions of what they can achieve (Luthans et al. 2007b). Hopeful employees tend to be independent in their thought processes and possess an internal locus of control that helps them to be motivated by the accomplishment of enriched tasks. Moreover, hopeful leaders and managers are crucial for organizational growth. Such leaders stimulate their followers to determine their own goals and inspire them to reach their maximum potential. Research has also shown a positive relationship between higher level of "hope" among employees and organizational outcomes (Luthans et al. 2007b, 2005). Empirical evidence

has also shown that PsyCap is positively correlated with performance and satisfaction of employees (Luthans et al. 2007a).

Luthans and Youssef (2004) argued that optimism allows individuals to take credit for favorable events in their lives and therefore results in enhanced self-esteem and morale. They also claim that optimism shields individuals from depression, guilt, self-blame, and despair. Finally, resilience enhances the positive abilities and reduces the fear factors within individuals. Therefore, resilient individuals are in a better position to bounce back from difficult circumstances or crises. Luthans et al. (2007b) also argued that PsyCap emphasizes a new approach to organizational management that inspires a unique and long-term competitive advantage. The concept of PsyCap is not purported to compete with or replace the widely established need for human capital and social capital. PsyCap is, rather, a new dimension which builds positive psychological capacities and takes the culture of the whole organization to new heights where human potential is valued the most.

Researchers consider PsyCap as a fundamental asset of authentic leadership (Luthans and Avolio 2003; Walumbwa et al. 2008) which is unique and vital for contemporary businesses (George et al. 2007). Authentic leaders possess a great deal of self-efficacy, hope, optimism, and resilience (Jensen and Luthans 2006). With these attributes, authentic leaders are well equipped to face the challenges of the corporate business world by understanding their followers and realizing the full potential of their vision (Jensen and Luthans 2006), establishing organizational trust (Norman 2006), and appreciating the complexity of the situation (Avey 2007). They are also able to develop their followers as authentic leaders (Luthans and Avolio 2003; George and Sims 2007) through role modeling (Avolio and Gardner 2005), monitoring, teaching, and coaching (Bass and Steidlmeier 1999). They are committed to building the highest level of organizational capacity through individual performance (Gardner and Schermerhorn 2004), intra- and interindividual impact, group-level impact, and organizational-level impact (Avolio and Luthans 2006). With a high level of PsyCap as their primary quality, authentic leaders turn their organizations into sustainable and high performing ventures and highly desirable places to work for.

Therefore, if developed and well managed, PsyCap can provide enormous potential benefits for organizations. Investment and leveraging of PsyCap can help enterprises to develop a strong workforce with the capacity to build large and complex ventures. With the increasing trend of strategic alliances, having better PsyCap at all levels of the organization can help enterprises to deal with the challenges which organizations normally face when they work in various forms of alliances. PsyCap can also help businesses to realize desirable attitudinal outcomes which include job satisfaction, commitment to the organization, organizational citizenship, and perceived organizational effectiveness (Luthans and Youssef 2004).

A major competitive advantage of PsyCap is that it is "state-like" and hence open to development through interventions. In a recent study, Luthans et al. (2008a) used a 2-h highly focused Web-based training intervention. They employed pretest and post-test control group experimental design on a heterogeneous samples of adults working in the sectors of manufacturing, service, sales, and government. They measured the PsyCap of study subjects before and after the intervention and found a significant improvement in PsyCap of those who had gone through the intervention. Such studies show that PsyCap is developable and that, too, through Web-based intervention, is an affordable and easy way to deliver such development.

Finally, recent works [see Luthans et al. (2006)] have also shown that investment in PsyCap development generate high return on investment (ROI). Luthans et al. (2007a,b) used the approach developed by Skarlicki et al. (1996) to calculate ROI on PsyCap development in a study of 74 managers who went through a microintervention for PsyCap development. The results of these initial studies show high impact of PsyCap development on business performance [see Gallup Leadership Institute (GLI) (2006)]. It is apparent that PsyCap has a twofold impact; first, in terms of organizational culture and environment and, second, in terms of economic and financial performance.

Implications of PsyCap for Construction Organizations

In many countries, the construction industry is known as involving rough, tough, dirty, and dusty activities. With a generally poor record of health and safety, ethical practices, and professionalism, the construction industry is failing to attract and retain talent. Construction needs to improve its social image (Rameezdeen 2007) by taking steps to construct a new reflection of the industry that is environmentally conscious, economically viable, socially equitable, professionally competent, responsible, and ethical (Ofori and Toor 2008). Investing in the development of the existing talent of the industry can be the beginning. More attention to improving the psychological capacities of the knowledge workers can have several long-term benefits. Employees with greater self-efficacy are likely to approach the problems they encounter in more innovative and creative ways. Hopeful, optimistic, and resilient employees are likely to be confident and to function effectively in teams to produce sustainable project outcomes, even when the work involves some crises.

Human resources are indispensable assets which an organization can truly capitalize on (Luthans and Youssef 2004). Construction organizations need to adopt strategic measures to retain their existing employees and attract new talent. To achieve this, they need to invest in developing the PsyCap of their employees through long- and short-term interventions. Given its established theoretical and research base, PsyCap possesses significant potential for improving organizational outcomes in construction businesses. It is plausible to posit that construction organizations in better psychological health are likely to provide superior conditions for their employees, both leaders and followers, to grow and contribute to the achievement of the organizations' objectives. Moreover, it is likely that the employees would feel stronger psychological contracts with their employers which will result in higher motivation, job satisfaction, commitment to the organization, and reduced turnover (Dainty et al. 2004). Such organizations can also be expected to attain self-responsibility and continuous improvement among their employees through organizational learning (Raidén and Dainty 2006).

High PsyCap construction organizations are likely to attain greater success in their strategic alliances and other business relationships. Employees with high PsyCap will have better capacity to adjust to new conditions and work in cooperation with their counterparts from other organizations to pursue the project goals. Moreover, as many construction projects involve players from different cultural backgrounds, employees with high PsyCap will be in a better position to adjust in a cross-cultural environment. High PsyCap construction organizations will be capable of making a rebound from failure as they would take such failure as learning rather than a constraining factor. Construction organiza-

tions with better PsyCap will also develop authentic leaders and followers who, together, will create a positive organizational culture based on strong ethical and moral values, team spirit, and transparency (Toor and Ofori 2008).

PsyCap will also create a strong affiliation between employees and their organizations, increasing loyalty to the organization and reducing turnover. These positive attributes of an organization will not only make it a good place to work for its current employees but will also help to attract, develop, and retain new talent. Given the advantages of PsyCap, there is a need for construction organizations to develop the PsyCap of their employees at all levels. As various studies have shown, construction organizations can gain a high ROI in PsyCap development from improved employee performance and sustained organizational growth.

Hypotheses

In their very first conceptualization of authentic leadership, Luthans and Avolio (2003) argued that authentic leaders possess superior psychological capacities meaning that they are hopeful, optimistic, confident, and resilient. In other words, there is a theoretical argument that PsyCap is an important asset of authentic leaders. Others argue that authentic leaders can be instrumental in enhancing the PsyCap in an organization, leading to improved performance and competitiveness (Avolio et al. 2004). Authentic leaders build their own PsyCap through successful practice and performance. They are also keen to develop it in their associates and followers as well (Luthans et al. 2005). However, there is paucity of empirical evidence showing any relationship between PsyCap and authenticity of leaders. Based on the above assertions, the following hypothesis is proposed:

Hypothesis 1: Leaders with Higher Levels of PsyCap Rate High on Authenticity. Leadership researchers argue that there are a number of parallels between authentic leadership and transformational leadership. Authentic and transformational leaders share attributes such as self-awareness, self-regulations, positive moral perspective, positive modeling, and positive social exchanges [see Avolio and Gardner (2005)]. Walumbwa et al. (2008) also showed many similarities between authentic leadership and transformational leadership. Since PsyCap is considered to be the fundamental asset of authentic leaders, it is plausible to hypothesize that PsyCap would also engender greater transformational behaviors in leaders. A recent study by Avey et al. (2008) showed that both PsyCap and transformational leadership strongly predict employee empowerment. Well being has also been identified as a potential component of PsyCap (Luthans et al. 2007b) and Arnold et al. (2007) showed that psychological well being is strongly associated with transformational leadership. This implies that transformational leaders are likely to score high on PsyCap. Previous research has shown that transformational and visionary leaders are often considered to be optimistic, hopeful, confident, and resilient [see Peterson et al. (2008)]. In ratings obtained from the followers, Peterson et al. (2008) ascertained that high PsyCap leaders rate high on transformational leadership.

Based on these claims, the following hypothesis is proposed:

Hypothesis 2: Leaders with Higher Levels of PsyCap Exhibit More Transformational Leadership. Studies on full-range leadership model typically show that transformational leadership is negatively associated with laissez-faire leadership. Data from the United States, presented by Avolio and Bass (2004)

in their multifactor leadership questionnaire (MLQ) manual, shows that passive management by exception and laissez-faire leadership are negatively related with transformational leadership—for both self-ratings and ratings done by others. Metaanalysis by Judge and Piccolo (2004) confirms that relationship. Crawford (2005) found knowledge management (information acquisition, information creation, and information application) is positively associated with transformational leadership but is negatively associated with transactional and laissez-faire leadership. This, in turn, implies that transactional and laissez-faire leaders are likely to score low on PsyCap.

Hypothesis 3: Leaders with Higher Levels of PsyCap Exhibit Low Transactional and Laissez-Faire Leadership. Previous research on PsyCap has shown that it is positively associated with employee performance (Luthans et al. 2008b), employees' positive engagement in tasks (Avey 2007), and followers' trust in the leader and management (Norman 2006).

Given this evidence of positive employee and organizational outcomes, the following hypothesis is proposed:

Hypothesis 4: Leaders with Higher Levels of PsyCap Experience Superior Leadership Outcomes, Such as Effectiveness, Extra Effort, and Satisfaction.

Method

Measures Applied

To measure PsyCap, PsyCap questionnaire (PCQ) was used. PCQ is a self-report 24-item scale proposed by Luthans et al. (2007a,b) and consists of items adopted from the already established scales including efficacy scale (Parker 1998), hope scale (Snyder et al. 1996), resilience scale (Wagnild and Young 1993), and optimism scale (Scheier and Carver 1985). Luthans and colleagues have recently used this scale in various studies and found that it produces reliable results [see Luthans et al. (2007a,b, 2008b)]. For their studies, Luthans et al. (2007a,b, 2008b) have originally used a six-point Likert-type scale in their studies. However, in this study, a five-point Likert-type scale was used to obtain a consistency of scale across the whole questionnaire which included other measures as well. Self-report responses on PCQ were sought on a five-point scale from 1 ("strongly disagree") to 5 ("strongly agree"). Sample items of PCQ can be seen in Appendix I.

To measure authenticity, "authenticity inventory" or AI:3 (Kernis and Goldman 2005, 2006) was used. AI:3 is a self-report 45-item scale which comprises four subscales including awareness, unbiased processing, behavior, and relational orientation. This scale has been developed and refined several times to measure "authenticity" and has fairly high values for internal reliability on composite scale and all subscales. It has been used in several studies and has produced test-retest reliability [see Kernis and Goldman (2005, 2006); Lakey et al. (2008)]. Responses were made on a five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Sample items of AI:3 can be seen in Appendix I.

To measure various forms of leadership and leadership outcomes, MLQ form 5X (Avolio and Bass 2004) was used. MLQ is a 45-item scale which measures transformational leadership, transactional leadership, laissez-faire leadership, and leadership outcomes (extra effort, effectiveness, and satisfaction). MLQ is

Table 1. Demographic Details of Respondent Managers

Demographic	Range	Frequency
Age	<30	3
	31–40	9
	41–50	14
	51–60	6
	Mean age	42.5
Gender	Males	27
	Females	5
Organization type	Developer	10
	Consultant/designer	16
	Contractor	6
Work experience	<5 years	2
	5–10	7
	11–15	3
	16–20	9
	21–25	5
	26–30	6
	Mean experience	18.4
Type of organization (according to number of employees)	Large (>500)	7
	Medium (50–500)	24
	Small (1–50)	1

the most widely used leadership measurement scale and large numbers of studies have been published reporting results on MLQ. Sample items of MLQ can be seen in Appendix I.

Data Collection Approach

This study reports on part of a larger project on leadership that had the aim of studying authentic leadership development in the construction industry of Singapore. In the first phase of the project, face-to-face interviews were conducted with senior executives (at the chief executive or director levels) who were reputed as authentic leaders by their colleagues within their own organizations and in the industry, starting with practitioners who had been elected as presidents of their professional institutions. Through a peer nomination process, 45 interviews were conducted in the first phase of the project. Each of these interviewees was requested to nominate one or more managers from their organizations whom they perceived as "authentic leaders"—who, from the definition proposed by George (2003), have a sense of

purpose, practice solid values, demonstrate self-discipline, lead with heart, and establish connected relationships.

A total of 90 managers were nominated by the senior executives who were interviewed. Short briefing sessions were held with the nominated managers to explain to them the nature of the study and the research objectives and to seek their consent to participate in the study. Questionnaires were then distributed to the managers. Follow-up e-mail messages were sent and telephone calls were made to the managers in an attempt to enhance the response rate. Some 32 completed questionnaires were returned, yielding a response rate of 35%. Most of the managers who were unable to complete the questionnaire cited their busy schedule in the prevailing construction boom in construction activity in Singapore.

A major reason for the small sample size is the systematic purposive sampling approach that was adopted to select authentic leaders to participate in this study. The peer nomination process was employed to approach the leaders who were considered authentic. This precondition of studying only managers who were authentic leaders reduced the potential number of participants and hence resulted in a smaller sample size. Applying purposive sampling techniques as was done in the current research typically puts a restraint on the number of respondents. However, purposive sampling is based on informational considerations as its purpose is to maximize information (Lincoln and Guba 1985) without violating statistical requirements. Such techniques ensure that relevant types of people are included in the sample (Bock and Sergeant 2002). Such studies can yield robust results from their typically small sample sizes. For example, Lingard (2001) used a sample size of 22 respondents and Lingard and Holmes (2001) employed a sample size of 15 participants in their statistical analyses.

Analysis and Results

Values of Cronbach's α were first computed for subscales and composite scales employed in this study. This coefficient assesses the internal reliability of a psychometric instrument which measures how well the items of a scale measure a unidimensional latent construct. The higher the value of Cronbach's α, the greater is the internal reliability of the psychometric scale. Cronbach's alpha values for PsyCap, authenticity of leaders, various forms of leadership, and leadership outcomes were calculated and appear

Table 2. Means, Standard Deviations, Reliabilities, and Correlations for Psychological Capital, Authenticity, Transformational, Transactional, and Laissez-Faire Leadership

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Age (years)	42.45	9.54	1								
2. Overall work experience (years)	18.35	8.28	0.97^a	1							
3. Total number of employees	530.20	669.21	0.16	0.10	1						
4. Type of organization (according to number of employees)	2.17	0.53	0.14	0.12	0.86^a	1					
5. Psychological capital	3.90	0.39	−0.31	−0.28	0.10	0.08	0.88^c				
6. Authenticity	3.66	0.37	0.00	0.04	0.19	0.17	0.52^a	0.92^c			
7. Transformational leadership	2.95	0.52	−0.14	−0.04	0.29	0.36	0.45^b	0.42^b	0.91^c		
8. Transactional leadership	1.92	0.54	−0.34	−0.29	−0.15	−0.06	0.29	−0.16	0.38^b	0.78^c	
9. Laissez-faire leadership	0.46	0.43	0.13	0.17	0.08	0.10	$−0.38^b$	$−0.54^a$	−0.25	−0.01	0.53^c

[a]Correlation is significant at the 0.01 level (two-tailed).

[b]Correlation is significant at the 0.05 level (two-tailed).

[c]Cronbach's alpha for internal reliability.

Table 3. Means, Standard Deviations, Reliabilities, and Correlations for PsyCap and Authenticity

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. PsyCap	3.90	0.39	0.88[c]									
2. PsyCap self-efficacy	4.18	0.52	0.90[a]	0.85[c]								
3. PsyCap hope	3.99	0.43	0.91[a]	0.72[a]	0.73[c]							
4. PsyCap resiliency	3.77	0.37	0.88[a]	0.80[a]	0.77[a]	0.56[c]						
5. PsyCap optimism	3.63	0.43	0.83[a]	0.62[a]	0.77[a]	0.59[a]	0.51[c]					
6. Authenticity	3.66	0.37	0.52[a]	0.56[a]	0.36[b]	0.38[b]	0.49[a]	0.92[c]				
7. Awareness	3.91	0.50	0.60[a]	0.58[a]	0.48[a]	0.51[a]	0.55[a]	0.85[a]	0.85[c]			
8. Unbiased processing	3.51	0.51	0.20	0.29	0.10	0.12	0.15	0.79[a]	0.47[a]	0.75[c]		
9. Behavior	3.37	0.41	0.31	0.35	0.14	0.24	0.36[b]	0.82[a]	0.58[a]	0.72[a]	0.69[c]	
10. Relational orientation	3.78	0.42	0.56[a]	0.60[a]	0.42[b]	0.40[b]	0.52[a]	0.76[a]	0.68[a]	0.38[b]	0.42[b]	0.76[c]

[a]Correlation is significant at the 0.01 level (two-tailed).

[b]Correlation is significant at the 0.05 level (two-tailed).

[c]Cronbach's alpha for internal reliability.

along the diagonals in Tables 2–6. Satisfactory results of internal reliabilities for PsyCap (24 items, $\alpha=0.88$), PsyCap self-efficacy (four items, $\alpha=0.85$), PsyCap hope (four items, $\alpha=0.73$), PsyCap resiliency (four items, $\alpha=0.56$), PsyCap optimism (four items, $\alpha=0.51$), authenticity (45 items, $\alpha=0.92$), transformational leadership (20 items, $\alpha=0.91$), transactional leadership (12 items, $\alpha=0.78$), and leadership outcomes—effectiveness (four items, $\alpha=0.61$), extra effort (three items, $\alpha=0.74$), satisfaction (two items, $\alpha=0.56$)—led to the next level of analysis in which charts were drawn (Figs. 1–3) to analyze the trends of self-ratings of respondents given to various measures included in this study. It should

be noted that PsyCap and authenticity were measured on a scale from 1 to 5, whereas for MLQ, a rating scale from 0 to 4 was employed.

Figs. 1 and 2 show that the nominated authentic leaders were fairly similar in their self-ratings on the PsyCap and authenticity scales, although they belonged to different age groups, had different periods of experience, or were working in organizations that varied in size (according to the number of employees, as shown in Table 1). Although there are fluctuations in the self-rating of transformational leadership along the horizontal axis, self-ratings on transformational leadership are generally close to 3 (maximum

Table 4. Means, Standard Deviations, Reliabilities, and Correlations for PsyCap and Transformational Leadership

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. PsyCap	3.90	0.39	0.88[c]									
2. PsyCap self-efficacy	4.18	0.52	0.90[a]	0.85[c]								
3. PsyCap hope	3.99	0.43	0.91[a]	0.72[a]	0.73[c]							
4. PsyCap resiliency	3.77	0.37	0.88[a]	0.80[a]	0.77[a]	0.56[c]						
5. PsyCap optimism	3.63	0.43	0.83[a]	0.62[a]	0.77[a]	0.59[a]	0.51[c]					
6. Transformational leadership (TL)	2.95	0.52	0.45[b]	0.58[a]	0.26	0.31	0.37[b]	0.91[c]				
7. Idealized influence (II)	2.93	0.54	0.41[b]	0.56[a]	0.27	0.30	0.29	0.91[a]	0.79[c]			
8. Inspirational motivation (IM)	2.93	0.67	0.46[a]	0.58[a]	0.34	0.27	0.38[b]	0.87[a]	0.75[a]	0.83[c]		
9. Intellectual stimulation (IS)	3.01	0.56	0.49[a]	0.59[a]	0.28	0.45[b]	0.37[b]	0.83[a]	0.66[a]	0.66[a]	0.74[c]	
10. Individualized consideration (IC)	2.95	0.65	0.18	0.29	0.00	0.05	0.26	0.82[a]	0.63[a]	0.62[a]	0.67[a]	0.64[c]

[a]Correlation is significant at the 0.01 level (two-tailed).

[b]Correlation is significant at the 0.05 level (two-tailed).

[c]Cronbach's alpha for internal reliability.

Table 5. Means, Standard Deviations, Reliabilities, and Correlations for PsyCap and Leadership Outcomes

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. PsyCap	3.90	0.39	0.88[c]							
2. PsyCap self-efficacy	4.18	0.52	0.90[a]	0.85[c]						
3. PsyCap hope	3.99	0.43	0.91[a]	0.72[a]	0.73[c]					
4. PsyCap resiliency	3.77	0.37	0.88[a]	0.80[a]	0.77[a]	0.56[c]				
5. PsyCap optimism	3.63	0.43	0.83[a]	0.62[a]	0.77[a]	0.59[a]	0.51[c]			
6. Effectiveness	3.02	0.41	0.49[a]	0.54[a]	0.34	0.40[b]	0.40[b]	0.61[c]		
7. Extra effort	2.80	0.60	0.24	0.35	0.14	0.06	0.26	0.59[a]	0.74[c]	
8. Satisfaction	3.05	0.51	0.04	0.16	−0.12	−0.10	0.17	0.68[a]	0.56[a]	0.56[c]

[a]Correlation is significant at the 0.01 level (two-tailed).

[b]Correlation is significant at the 0.05 level (two-tailed).

[c]Cronbach's alpha for internal reliability.

rating is 4). On the other hand, it can be seen that ratings of transactional leadership drop with increasing age and experience. Although transactional leadership is at its peak during the manager's midcareer, it declines as authentic leaders grow older and become more experienced. Fig. 3 shows that PsyCap, authenticity, and transformational leadership are at the lowest and transactional leadership is at the highest among the contractors. However, there is a marginal difference among developers and consultants on these measures. These findings imply initial trends that PsyCap, authenticity, and transformational leadership bear some positive association however it seems to be opposite with transactional leadership.

To further examine the relationships among PsyCap, authenticity, leadership, and leadership outcomes, zero-order correlations were computed. These correlations are shown in Tables 2–6. Table 2 presents a summary of these correlations and shows that demographic variables such as "age" and "overall work experience" are not correlated with any of the scales in Table 2. PsyCap is significantly and positively correlated with authenticity ($r=0.52$, $p<0.01$), and transformational leadership ($r=0.45$, $p<0.05$). However, correlation of PsyCap with transactional leadership is marginal and not significant ($r=0.29$, $p>0.05$). Also, PsyCap is negatively correlated with laissez-faire leadership ($r=-0.39$, $p<0.05$) which bears further negative correlations with authenticity ($r=-0.54$, $p<0.01$), transformational leadership ($r=-0.25$, $p>0.05$), and transactional leadership ($r=-0.01$, $p>0.05$).

Table 3 shows the correlation coefficients among composite scales and component scales of both PsyCap and authenticity. Noticeably, PsyCap and all of its components bear positive correlations with authenticity and its components. These correlations are also significant with the exception of "unbiased processing" and "behavior" which do not bear significant correlations with PsyCap or its components (only behavior is significantly correlated with PsyCap optimism: $r=0.36$, $p<0.05$). In summary, authenticity and PsyCap bear significant and positive correlations but correlations are not always significant at the component level. These findings provide support for Hypothesis 1.

Table 4 shows the correlation coefficients of PsyCap with transformational leadership. PsyCap is positively and significantly correlated with transformational leadership ($r=0.45$, $p<0.05$), idealized influence ($r=0.41$, $p<0.05$), inspirational motivation ($r=0.46$, $p<0.01$), and intellectual stimulation ($r=0.49$, $p<0.01$). However, PsyCap is only marginally correlated with individual consideration ($r=0.18$, $p>0.05$). Among the components of PsyCap, PsyCap self-efficacy also bears positive and significant correlations with idealized influence ($r=0.56$, $p<0.01$), inspirational motivation ($r=0.58$, $p<0.01$), and intellectual stimulation ($r=0.59$, $p<0.01$). PsyCap hope does not bear any significant correlations with components of transformational leadership, although it is positively correlated with all except with individual consideration. However, PsyCap resiliency is positively and significantly correlated with intellectual stimulation ($r=0.45$, $p<0.05$), whereas PsyCap optimism is positively and significantly correlated with inspirational motivation ($r=0.38$, $p<0.05$) and intellectual stimulation ($r=0.37$, $p<0.05$).

Table 5 also shows that transformational leadership is positively correlated to all components of PsyCap, although correlations with PsyCap hope ($r=0.26$, $p>0.05$) and PsyCap resiliency ($r=0.31$, $p>0.05$) are positive but not significant. It is notable that individualized consideration is significantly correlated with neither PsyCap nor any of its components. In summary, association of composite PsyCap with transformational leadership is

more evident than individual components of both measures. At the level of the composite scale, Table 4 shows full support for Hypothesis 2; however, at the component level, Hypothesis 2 only partially holds.

The results in Table 5 show correlations of PsyCap with leadership outcomes. It can be seen that PsyCap and three of its components are significantly and positively correlated to effectiveness (PsyCap: $r=0.49$, $p<0.01$; PsyCap self-efficacy: $r=0.54$, $p<0.01$; PsyCap resiliency: $r=0.40$, $p<0.05$; PsyCap optimism: $r=0.40$). PsyCap hope is positively correlated with "effectiveness" but this correlation is not significant ($r=0.34$, $p>0.05$). Table 5 also illustrates that PsyCap and its components do not bear any significant correlations with "extra effort"—these correlations are marginal, though positive—and "satisfaction" of leaders. PsyCap hope and PsyCap resiliency are, in fact, negatively correlated with satisfaction. This finding is ironic because effectiveness is significantly and positively correlated with both extra effort and satisfaction, as shown in Table 5. These findings were puzzling. It was expected that PsyCap would bear a positive relationship with all leadership outcomes but that was not the case. It was decided to examine if manifestation of transformational leadership plays a mediating role in bringing more extra effort and satisfaction.

For this purpose, regression analysis techniques proposed by Kenny et al. (1998) were employed in three steps. In Step 1, each of the leadership outcome (effectiveness, extra effort, and satisfaction) variables was regressed on PsyCap. In Step 2, transformational leadership was regressed on PsyCap. In Step 3, each leadership outcome was regressed on both PsyCap and transformational leadership. In this regression analysis, leadership outcomes were considered as dependent variables, PsyCap was taken as an independent variable, and transformational leadership was treated as a mediating variable. For full mediation, as Kenny et al. (1998) suggested, the independent variable should relate to the mediating variable in the second step and the mediating variable should relate to the dependent variable in the third step [also see: Luthans et al. (2008b)]. Also, in the third step, the relationship of the independent variable with the dependent variable should be significantly lower in magnitude than in the second step. Furthermore, for full mediation, the independent variable must not relate to the dependent variable when the mediating variable is added to the equation.

The results obtained from following these steps are shown in Table 6. The regression coefficient for PsyCap is significant when effectiveness is regressed on PsyCap ($\beta=0.48$, $p<0.01$) but not so when extra effort and satisfaction are regressed on PsyCap (extra effort: $\beta=0.24$, $p>0.05$; satisfaction: $\beta=0.41$, $p>0.05$). The regression coefficient is significant when transformational leadership is regressed on PsyCap ($\beta=0.45$, $p>0.05$). In each of the Step 3 in Table 6, the mediating role of transformational leadership is verified as it contributes significantly to the regression equation (effectiveness: $\beta=0.59$, $p<0.01$; extra effort: $\beta=0.72$, $p<0.01$; satisfaction: $\beta=0.65$, $p<0.01$).

It can also be noticed that the relationships of PsyCap with leadership outcomes become weaker in Step 3 when transformational leadership is introduced as a predictor (effectiveness: $\beta=0.22$, $p>0.05$; extra effort: $\beta=-0.08$, $p>0.05$; satisfaction: $\beta=-0.25$; $p>0.05$). This shows that transformational leadership fully mediates the relationship among PsyCap and leadership effectiveness, extra effort, and satisfaction. Therefore, manifestation of transformational leadership is necessary for leaders with higher PsyCap to experience better leadership outcomes. These findings imply indirect support for Hypothesis 3, meaning that for leaders

**Table 6.** Regression Results for Mediating Role of Transformational Leadership

Step	Variable	Predictors	ΔR^2	β	Significance
1	Effectiveness	PsyCap	0.23	0.48[b]	0.007
2	Transformational leadership	PsyCap	0.20	0.45[a]	0.013
3	Effectiveness	PsyCap	0.52	0.22	0.153
		Transformational leadership		0.59[b]	0.000
1	Extra effort	PsyCap	0.02	0.24	0.195
2	Transformational leadership	PsyCap	0.20	0.45[a]	0.013
3	Extra effort	PsyCap	0.47	−0.08	0.611
		Transformational leadership		0.72[b]	0.000
1	Satisfaction	PsyCap	0.02	0.41	0.831
2	Transformational leadership	PsyCap	0.20	0.45[a]	0.013
3	Satisfaction	PsyCap	0.34	−0.25	0.163
		Transformational leadership		0.65[b]	0.001

[a]$p < 0.05$.
[b]$p < 0.01$.

to benefit from higher PsyCap, manifestation of transformational leadership is important.

Table 7 shows the zero-order correlations among PsyCap and transactional leadership. As predicted in Hypothesis 4, composite PsyCap is not correlated with transactional leadership or its components except that it bears positive correlation with "contingent reward" ($r=0.40$, $p<0.05$). Similarly, composite scale of transactional leadership is correlated only with PsyCap optimism ($r=0.39$, $p<0.05$) but with no other components of PsyCap. However, both PsyCap self-efficacy ($r=0.42$, $p<0.05$) and PsyCap optimism ($r=0.38$, $p<0.05$) are also positively correlated with contingent reward. Also, PsyCap hope bears positive corre-

lations with management by exception (active) ($r=0.36$, $p<0.05$) as does PsyCap optimism ($r=0.49$, $p<0.01$). A notable finding in Table 6 is a negative correlation of PsyCap and its components with "management by exception (passive)" and "laissez-faire leadership." Also, as predicted in Hypothesis 5, PsyCap and all of its components are negatively correlated with laissez-faire leadership. This implies that leaders with higher PsyCap exhibit less laissez-faire leadership. These findings provide support for Hypothesis 4.
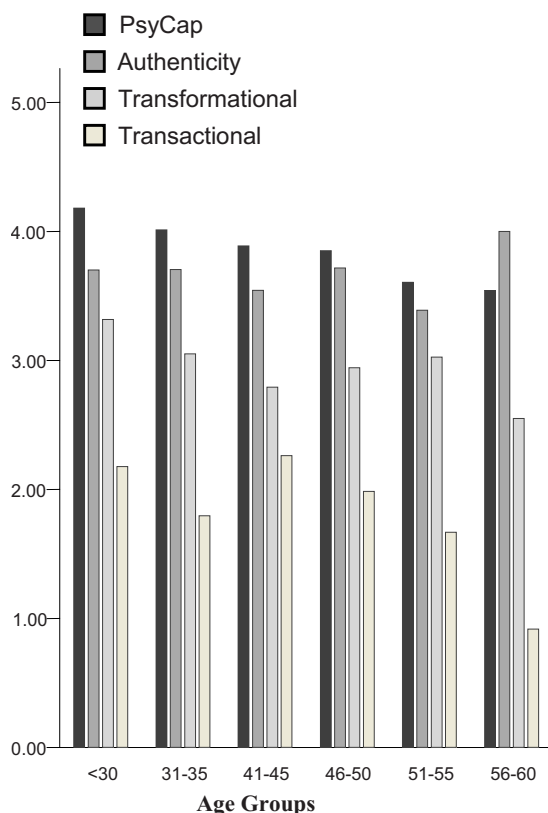
Fig. 1. PsyCap, authenticity, and leadership across various age groups
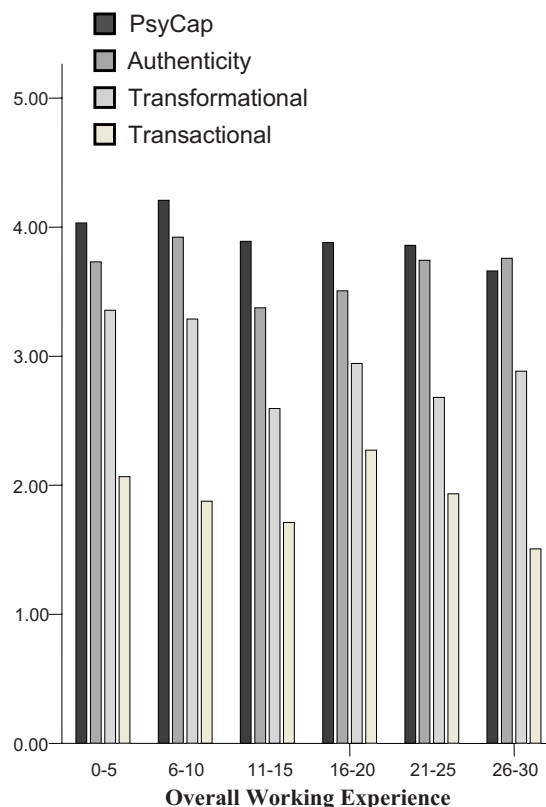
Fig. 2. PsyCap, authenticity, and leadership across groups with varying working experience
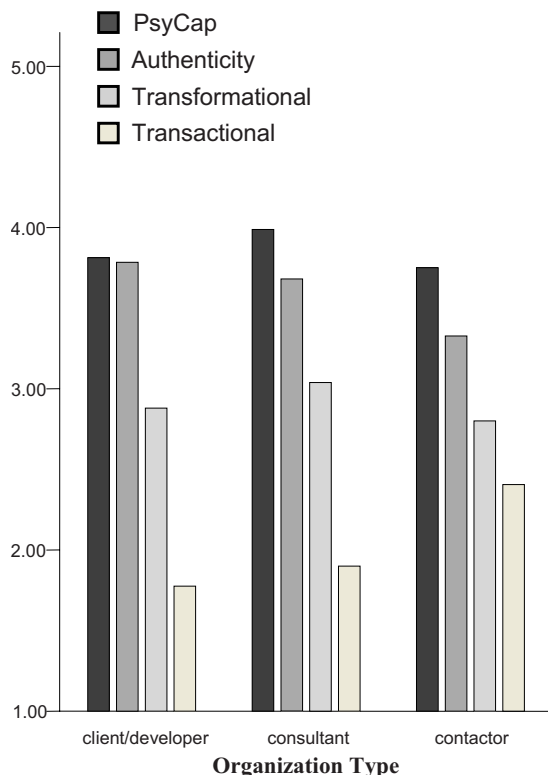
Fig. 3. PsyCap, authenticity, and leadership across various types of organizations

General Discussions

Previous research on PsyCap has shown that it is positively associated with employee performance, satisfaction, and commitment [see Luthans et al. (2005, 2007a); Larson and Luthans (2006)]. Other recent work shows that PsyCap plays a mediating role between a supportive organizational climate and employee performance [see Luthans et al. (2008b)]. In another empirical study, Avey (2007) ascertained several positive relationships of PsyCap with followers' quality and quantity of solutions generated and positive emotional and behavioral engagement in the task. Avey (2007) also found that follower PsyCap and positive emotional/behavioral engagement play a mediating role between situational

complexity and a leader's PsyCap, quality, and quantity of solutions.

Other studies on components of PsyCap have also produced favorable results for organizational outcomes. For example, empirical research of Peterson and Byron (2007) on hope found that more hopeful employees show higher job performance and produce more and better quality solutions to problems arising at work. Norman (2006) examined the role of trust and its implications for PsyCap and leadership authenticity. He found that a leader's level of PsyCap impacts followers' trust in the leader. He also found that PsyCap is significantly associated with transparency, trust in management, overall leader rating, and authenticity. These findings in the previous research provide strong support for the positive outcomes that PsyCap generates in followers, leaders, and organizations.

Findings in the current research provide further evidence that PsyCap plays an important role in positive organizational and individual work outcomes. A significant finding reported in this article is the mediating role that transformational leadership plays in generating positive leadership outcomes for leaders with better PsyCap. The results reported here show that PsyCap has notable positive associations with authenticity, transformational leadership, and leadership outcomes. Also, the finding that PsyCap is negatively correlated with laissez-faire leadership echoes the study of Avey et al. (2006) in which they found negative association of PsyCap with employee absenteeism. These findings suggest that positive PsyCap has the potential to help organizations to develop sustainable competitive advantage.

Limitations and Recommendations for Future Research

Like most research projects, the current study has some limitations. First, the number of responses used in this study was relatively small. As noted before, criteria set to select authentic leaders reduced the population and hence the sample size. Applying purposive sampling techniques adopted here typically puts a restraint on the likely number of respondents. Second, the current research used a cross-sectional design. Future research studies can overcome these limitations by increasing the number of respondents and collecting data at various points of time to further validate the findings. Also, analysis in the current article was derived from self-ratings of leaders on various measures. Future studies

Table 7. Means, Standard Deviations, Reliabilities, and Correlations for Transactional and Laissez-Faire Leadership

Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. PsyCap	3.90	0.39	0.88[c]									
2. PsyCap self-efficacy	4.18	0.52	0.90[a]	0.85[c]								
3. PsyCap hope	3.99	0.43	0.92[a]	0.72[a]	0.73[c]							
4. PsyCap resiliency	3.77	0.37	0.88[a]	0.80[a]	0.77[a]	0.56[c]						
5. PsyCap optimism	3.63	0.43	0.83[a]	0.62[a]	0.77[a]	0.59[a]	0.51[c]					
6. Transactional leadership	1.92	0.54	0.29	0.18	0.26	0.21	0.39[b]	0.78[c]				
7. Contingent reward	2.83	0.71	0.40[b]	0.42[b]	0.28	0.31	0.38[b]	0.63[a]	0.67[c]			
8. Management by exception (active)	2.09	1.03	0.36	0.16	0.36[b]	0.29	0.49[a]	0.81[a]	0.24	0.90[c]		
9. Management by exception (passive)	0.85	0.61	−0.28	−0.27	−0.23	−0.25	−0.24	0.55[a]	0.13	0.19	0.68[c]	
10. Laissez-faire leadership	0.46	0.42	−0.39[b]	−0.43[b]	−0.21	−0.41[b]	−0.30	−0.01	−0.26	−0.02	0.30	0.53[c]

[a]Correlation is significant at the 0.01 level (two-tailed).

[b]Correlation is significant at the 0.05 level (two-tailed).

[c]Cronbach's alpha for internal reliability.

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can collect data from subordinates and colleagues of leaders to cross check the correlations of PsyCap with authenticity, leadership, and leadership outcomes.

Finally, future studies can also focus on assessing the impact of PsyCap on hedonic and eudaemonic well being. Recent conceptualizations claim that authentic leadership leads to better psychological functioning and health of leaders. These claims can be extended to examine how PsyCap plays a role in the well being of leaders. Future research can also focus on PsyCap development and ROI in PsyCap development. Also worth exploring is how PsyCap is related to ethical leadership, organizational culture, organizational citizenship behavior, and satisfaction of subordinates with leaders and the performance of followers.

Conclusions

Recent developments in the literature on organizations and their behavior and development support the concept of PsyCap. The current study provides evidence that PsyCap is positively corre-

lated with authenticity, transformational leadership, and leadership outcomes, especially, leadership effectiveness. With the increasing complexity of the business world, uncertainty in markets, as well as employees' attitudes, it is timely for employers to invest in the PsyCap development of their leaders so that the impact can be transferred down throughout the organizations' membership. Once organizational leaders are able to master and exhibit positive psychological capacities, it will be easier for lower-level organizational members to follow suit.

It is vital that firms develop a stronger workforce with enhanced psychological capacities to succeed in the ongoing war for talent. If they are able to create an environment which encourages and enhances self-efficacy, hope, optimism, and resilience, not only will the current human resources stay on but also the organizations will be in a better position to attract and develop new talent. Construction firms should invest more in their human resources to realize sustainable and veritable returns in terms of overall organizational performance and effectiveness. Investing in, developing, managing, and leveraging on PsyCap will help firms to gain sustainable competitive advantage.

Appendix. Sample Questionnaire Items: PCQ (Sample Items)

Number	Statement	Strongly disagree→Strongly agree				
		1	2	3	4	5
1.	I feel confident in representing my work area in meetings with management					
2.	At the present time, I am energetically pursuing my work goals					
3.	I usually manage difficulties one way or another at work					
4.	I approach this job as if "every cloud has a silver lining"					

Authenticity Inventory (AI:3) (Sample Items)

Number	Statement	Strongly disagree→Strongly agree				
		1	2	3	4	5
1.	I am often confused about my feelings [R][a]					
2.	I am very uncomfortable objectively considering my limitations and shortcomings [R]					
3.	I frequently pretend to enjoy something when in fact, I really do not					
4.	I want people with whom I am close to understand my strengths					

[a]The "[R]" in front of some items means that the scores should be reversed on the five-point scale in the final analysis.

MLQ (Sample Items)

Number	Statement	Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
		0	1	2	3	4
1.	I talk about my most important values and beliefs					
2.	I provide other with assistance in exchange for their efforts					
3.	I am absent when needed					
4.	I heighten the desire of others to succeed					

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