

## RESEARCH ARTICLE

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# Psychological Capital Questionnaire (PCQ): Analysis of the Romanian Adaptation and Validation

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### Abstract

Two studies were performed to test the reliability and validity of Psychological Capital Questionnaire (PCQ) on the Romanian population. Psychological Capital (PsyCap) is a personal resource, which is associated with positive individual and organizational outcomes, such as well-being and performance. The main aim of the first study was to validate the Romanian version of PCQ. The second study tested to convergent and discriminant validity between PsyCap and other constructs, such as Big Five personality traits, well-being, and performance. Factor structure of PCQ was examined using confirmatory factor analysis on a sample of 665 of Romanian employees. The results indicate that the fit indices for PCQ are relatively adequate. The internal consistency estimates had values ranged from good to high ( $\alpha = .72-.91$ ) for the four dimensions of PsyCap and the omnibus concept, indicating overall fair reliability. The construct validity analysis was conducted on 304 employees and revealed that PsyCap is associated with personality dimensions, well-being, and performance. As a practical implication, PCQ is reliable to be used in the Romanian organizational context.

### Keywords

Psychological Capital Questionnaire, psychological capital, confirmatory factor analysis, validity, reliability

### Introduction

Starting from 2002 when Psychological Capital (PsyCap) was introduced in literature, this concept became rapidly one of the most used from Positive Organizational Behavior (POB; Luthans, 2002). 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 in today’s workplace” (Luthans, 2002, p. 54). One of the relatively newest positive concepts used in the organizational research is PsyCap. Thus, PsyCap is a higher order concept that represents the synergistic

combination of four positive capacities: self-efficacy, hope, optimism, and resilience (Luthans, 2002). Personal resources are aspects of the self that determine the adaptation to work environments and are related to resilience (Hobfoll, 1989; Judge, Locke, & Durham, 1997). PsyCap, as a personal resource, tends to be expressed in different behaviors that have a performance impact inside an organization (Luthans & Youssef, 2007). Despite the numerous publications on PsyCap, there is a gap regarding its conceptualization and psychometric properties. Moreover, in Romania, the study of PsyCap in organizations has been reduced (e.g., Vîrgă &

Paveloni, 2016), although there is meta-analytical evidence for the link between PsyCap and positive individual and organizational outcomes (Avey, Reichard, Luthans, & Mhatre, 2011). These contributions encouraged the use of PsyCap in different applications for well-being and performance enhancement in other's countries, such as the ones from East Europe.

### Defining PsyCap

Psychological Capital (PsyCap) is a group of personal resources that is included recently in the studies based on Job Demands-Resources model (JD-R model; Bakker & Demerouti, 2007). This model focuses on employee well-being and suggests that employees with a high level of personal resources are more likely to manage high job demands. For instance, in the first stages, the following personal resources were considered in the JD-R model: self-efficacy, optimism and, organizational based self-esteem; the first two personal resources are dimensions of PsyCap (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

PsyCap is a second-order concept formed by the following four capacities: self-efficacy, hope, resilience, and optimism (Luthans, 2002). *Self-efficacy* is considered to be the belief of an individual about his or her capacity to mobilize motivation, cognitive resources to act in a specific situation (Stajkovic & Luthans, 1998). Employees with a high level of self-efficacy are more likely to engage in challenging tasks, as they are more confident in resolving their daily or long-term assignments. *Hope* implies two components: agency or the will to manage and pathways that represent the capacity to find, clarify and follow the ways to success (Snyder, 2000). Employees with high levels of the hope set their priorities and objectives and are capable of developing different solutions to be successful in the workplace. *Resilience* is the capacity to deal and recover quickly from various demands such as problems, conflicts or other adversities (Luthans, Youssef, & Avolio, 2007). Resilient employees effortlessly adjust and recuperate themselves from hindrance demands or organizational changes. *Optimism* is the generalized anticipation of a positive outcome (Carver &

Scheier, 2002). An optimistic employee will expect to be successful in ambiguous or other stressful work situations.

PsyCap is preferably described as “state-like” (Avey, Luthans, & Youssef, 2010) and it is distinguished from relatively stable traits such as the Big Five personality traits (Barrick & Mount, 1991). From the POB perspective, PsyCap is considered a malleable concept, because it is open to change and development (Luthans, Youssef, et al., 2007). Thereby, PsyCap can be easily trained and developed through interventions (Luthans, Avey, Avolio, Norman, & Combs, 2006). The effectiveness of those interventions aimed to improve PsyCap and outcomes such as well-being and performance was several times tested (Luthans & Luthans, 2014; Luthans, Avey, & Patera, 2008; Luthans et al., 2006; Luthans, Avey, Avolio, & Peterson, 2010). Most of the research on this topic obtained significant positive results in enhancing PsyCap and other outcomes suggesting that PsyCap interventions could bring more than an average profit (Luthans, Youssef, et al., 2007).

### PsyCap and Outcomes

Previous empirical research showed that PsyCap scale has convergent and discriminant validity from the Big Five personality characteristics (Avey, Luthans, & Jensen, 2009) and a recent meta-analysis found a link between PsyCap and well-being, and also performance (Avey et al., 2011).

Most studies assessed the stability of PsyCap comparing to stable traits, but not so much the relationship between those concepts (e.g., individual differences such as proactive personality could be an antecedent of PsyCap; Avey, 2014). Previous research on the link between PsyCap dimensions and the five personality traits suggested that they are moderated related. Therefore, PsyCap is malleable comparing with personality traits (Luthans, Avolio, Avey, & Norman, 2007). Moreover, a recent study showed the PsyCap is related to performance and well-being after controlling for the Big Five Personality traits (Choi & Lee, 2014).

Numerous studies examined the relationship between PsyCap with individual and organizational results (Avey et al., 2010;

Luthans, Norman, et al., 2008; Youssef-Morgan & Luthans, 2015). The most frequent outcomes used in the literature related with PsyCap are performance, at the organizational level, and well-being, at the individual level. Well-being has several operationalizations in the literature, and most studies refer to work engagement (Hodges, 2010) and health (Penedo & Dahn, 2005; Ryan, & Deci, 2001). Recent reviews and a meta-analysis synthesized the results on this topic (Avey et al., 2011; Newman, Ucbasaran, Zhu, & Hirst, 2014; Sridevi & Srinivasan, 2012). Thus, PsyCap is significantly positive related to well-being ( $r = .40$ ), and also to performance ( $r = .26$ ) (Avey et al., 2011). Another study suggests that the relationship between PsyCap and performance is stronger with the omnibus concept than with the four PsyCap dimensions (Luthans, Avolio, et al., 2007). Nevertheless, experimental evidence was found recently for the link between PsyCap and the two positive outcomes (Hodges, 2010; van Windergarden, Bakker, & Derks, 2016). An employee that experiments positive psychological states will be prone to deploy greater effort and perform better at work. Those results encourage investments in using PsyCap interventions inside companies (Luthans, Youssef, et al., 2007).

## **The Psychological Capital Questionnaire**

As already stated, PsyCap seems to be linked to employees' well-being at the individual level and performance at the organizational level (Avey et al., 2011). Therefore, it is useful for the Romanian organizational environment to have a valid and reliable scale that measures PsyCap.

The four dimensions of PsyCap and also the omnibus concept can be evaluated with the help of PCQ. A previous review of the literature assessed the psychometric properties of the PCQ (Dawkins, Martin, Scott, & Sanderson, 2013). Arguments in choosing this scale to validate on the Romanian population were: PsyCap's malleability and its demonstrated possibility to be quickly developed through training (Luthans et al., 2006).

Several pre-existing measures were used to develop PCQ: self-efficacy (Parker, 1998), hope (Snyder et al., 1996), resilience (Wagnild & Young, 1993) and optimism (Scheier & Carver, 1985). The PCQ was developed taking into account the fact that those scales had a different number of items, Likert scale points, and may differ to the extent to which they were „state-like”. The final scale had 24-item PsyCap, six items for each scale, was on a 6-point Likert-type scale and was written in English (Luthans, Avolio, et al., 2007).

This research aims to validate PCQ (Luthans et al., 2007) on the Romanian population. Moreover, we intend to evaluate the psychometric properties of the PCQ for the same population regarding of reliability, factor structure, the validity of PCQ with different constructs (e.g., personality, well-being, and performance).

## **Methods**

To assess the psychometric properties and construct validity of PsyCap, we conducted the first study. This study used two samples of Romanian employees combined (from the public and private companies). Study 2 assessed if there is a relationship between the four dimensions of PsyCap and the omnibus concept with other positive variables (e.g., work engagement, mental and physical health, and performance). We tested the hypotheses with one of the previous samples (employees from private companies).

## **Participants and Procedure for Study 1**

We distributed 800 questionnaires to individuals from the public (organizations concerning the national safety) and private companies (IT&C field) from Romania. The management of the companies agreed to participate in the assessment. The employees from the public companies filled in the questionnaires on paper and in the case of private companies, the participants filled the battery of questionnaires via the internet or on paper. Thus, the first sample consisted of 665 participants that filled in all the

questionnaires. Only 83% of the respondents returned the questionnaires, and 46% of the participants worked in the private sector. This sample consisted in 70.1% men, with age between 19 and 60 ( $M = 35.24$ ;  $SD = 9.13$ ) and more than half of them had Bachelor's or Master Degree (58.9%). The general objective of the questionnaire was presented to the employees, and they participated voluntarily.

Test-retest reliability was calculated using a small sample of 154 employees that worked in the IT&C field, whose first administration was included in Sample 1 and 2. Almost forty-seven percent of the employees were men. The participants' age was between 19 and 60 years ( $M = 33.34$ ;  $SD = 10.81$ ) and 34.4 % of them had a Bachelor's degree, and 27.9% had a Master degree). The retest has been done after three months from the initial testing.

### Participants and Procedure for Study 2

The second sample consisted of the 304 employees from private companies from the IT&C field in Romania. These participants were also included in Sample 1. Four hundred questionnaires were distributed, and the response rate was approximately 76%. The demographic data for this sample was: almost 49% men, with age between 19 and 60 years ( $M = 32.12$ ;  $SD = 9.52$ ), and 38.8% of them had a Bachelor's degree, and 31.3% had a Master degree.

### The Adaptation Procedure for the Romanian Language PsyCap

All the instruments were in the Romanian version, and they were evaluated using the standard back-translation technique (Brislin, 1970). The items were initially translated from English into Romanian by a professional translator, and then another professional translator was contracted to translate the scale from Romanian into English. The English items obtained at this stage were compared with items of the original version in English. If the two versions are similar, the translation into Romanian can be considered appropriate one.

### Measures

*Psychological Capital* was assessed with the Psychological Capital Questionnaire (PCQ; Luthans, Avolio, et al., 2007). This questionnaire has in total 24 items and measures four subscales: self-efficacy, hope, resilience, and optimism (each scale is measured with six items). Some examples of items are: *self-efficacy* ("I feel confident analyzing a long-term problem to find a solution"), *hope* ("I can think of many ways to reach my current work goals"), *resilience* ("I usually take stressful things at work in stride"), and *optimism* ("When things are uncertain for me at work I usually expect the best"). The items were scored on a 6-point Likert-type scale (1 = *strongly disagree*, 6 = *strongly agree*) and three items are reverse-scored (item 13 from the resilience subscale and items 20 and 23 for the optimism subscale). The reliabilities for the PsyCap scale were excellent ( $\alpha = .91$ ) for Study 1 and ( $\alpha = .89$ ) for Study 2. Also, the reliability for each subscale was acceptable: hope ( $\alpha = .83$ ), self-efficacy ( $\alpha = .86$ ), resilience ( $\alpha = .73$ ) and optimism ( $\alpha = .72$ ) for Study 1, respectively hope ( $\alpha = .77$ ), self-efficacy ( $\alpha = .81$ ), resilience ( $\alpha = .71$ ) with the exception of optimism ( $\alpha = .67$ ) for Study 2.

*Personality dimensions* were assessed using a 15-item questionnaire proposed by Mowen (2000). The scales used were: introversion (3 items; "Quiet when with people"), agreeableness (3 items; "Agreeable with others"), conscientiousness (3 items; "Organized"), and neuroticism (3 items; "Moody more than others") and openness to experience (3 items; "Find novel solutions"). The responses were rated on 7-point scales (1 = *never* and 7 = *always*). The Cronbach's alpha values for the five dimensions in Study 2 were acceptable: introversion ( $\alpha = .81$ ), agreeableness ( $\alpha = .76$ ), conscientiousness ( $\alpha = .81$ ), neuroticism ( $\alpha = .78$ ), and openness to experience ( $\alpha = .80$ ).

*Work engagement* was measured with 9-item Utrecht Work Engagement Scale (UWES-9; Schaufeli & Bakker, 2003). The subscales used were vigor (3 items; "At my work, I feel bursting with energy"), dedication (3 items; "I am proud of the work that I do"), and absorption (3 items; "I get carried away when I am working"). All items were scored

on a 7-point frequency scale (0 = *never*, 6 = *always*). Work engagement had good reliability in Study 2 ( $\alpha = .92$ ).

*Performance* was assessed with a 6-item scale proposed by Feuerhahn, Kühnel, and Kudielka (2012). This scale measures task and contextual performance. The first three items measured task performance behavior ("The quality of the work is...") and the other three items measured contextual performance ("Helps colleagues..."). The items were scored on a 7-point Likert-type scale (1 = *below average*, 5 = *above average*). Cronbach's alpha values of the performance scale were adequate in Study 2 ( $\alpha = .89$ ).

*Mental health* was measured with an MHI-5 screening test (Berwick et al., 1991). A sample of an item was (e.g., "During the past month, how much of the time have you been a very nervous person?"). Three items were reversed scored (item 1, 3, and 5). The scale was evaluated on a 6-point scale (1 = *never*, 6 = *always*) and a small score indicated good mental health. The reliabilities of this scale were good in Study 2 ( $\alpha = .85$ ).

*Physical health* was assessed with a 4-item questionnaire (Ware, 1999). A sample of the item is "My health is excellent.". Two items were reversed scored (item 1 and 3). Answers were given on a 5-point Likert scale (1 = *totally disagree*, 5 = *totally agree*) and a small score involves high physical health. The reliabilities of the physical health scale was adequate in Study 2 ( $\alpha = .81$ )."

## Data Analysis

The Statistical Package for the Social Sciences for Windows 22.0 (SPSS; IBM Corp, 2013) and Mplus version 6.12 (Muthen & Muthen, 1998–2010) were used for analyzing the data in Study 1 and 2.

In Study 1 we analyzed the reliability (internal consistency and test-retest) of PCQ on the first sample. Exploratory and confirmatory factor analysis were conducted then to assess the psychometric integrity of the PCQ. Firstly, we performed an exploratory factor analysis. Secondly, we conducted the confirmatory factor analysis (CFA) and compared seven models: M1 – second-order model, with PCQ items, four factors and one general PsyCap factor; M2 – 4 correlated factors (hope, resilience, optimism, and self-efficacy) as indicators of PsyCap, each with 6 items; M3 – 4 uncorelated factors as indicators of PsyCap, each with 6 items; M4 – 3 factors as indicators of PsyCap with hope and resilience merged; M5 – 3 factors as indicators of PsyCap with hope and optimism merged; M6 – 3 factors as indicators of PsyCap with optimism and resilience merged; M7 – one factor as indicators of PsyCap with all the 24 items.

Finally, in Study 2, to investigate the validity of the content of PCQ, we have analyzed the relationships between the dimensions of this tool and other concepts (e.g., personality, well-being, and performance) on Sample 2.

## Results

### Study 1

**Reliability.** Table 1 displays descriptive statistics, reliabilities for Sample 1 on PsyCap dimensions. We calculated the internal consistency for Sample 1. Cronbach's alpha values for each dimension of PsyCap for Sample 1 ranged from good to high, suggesting good internal reliability.

Table 1. *Descriptive statistics and reliabilities for PsyCap dimensions for Sample 1*

Observed variables	Sample 1		
	M	SD	$\alpha$
Self-efficacy	5.06	.79	.86
Hope	4.73	.75	.83
Resilience	5.05	.70	.73
Optimism	4.92	.70	.72
PsyCap	4.94	.61	.91

Note. *NI* = 665

We calculated the test-retest reliabilities to see the degree of stability of PCQ on a sample of employees from the private sector (154 participants). This sample is part of Sample 2 from which we obtained a second measure of PsyCap. Test-retest statistics were calculated for Time 1 and 2 (after three months) and averaged. The test-retest statistics for self-efficacy (.61), hope (.57), resilience (.53), optimism (.67), and PsyCap (.63) suggest that PsyCap dimensions and the omnibus concept have relatively medium stability over time.

To assess the construct validity of PCQ, we calculated the correlations between the PCQ scales (see Table 2, for various samples). The correlation coefficients between PsyCap as an omnibus concept with the four dimensions are significant and exceed .80, suggesting a strong uni-dimensionality for PCQ. Most of the correlations are in the same range (.60 - .70), for the comparison (Sample 1 vs. Sample 2) with few exceptions (.40 - .60; for the optimism scale). These ranges were found in different samples (Iliescu & Sărbescu, 2012) and provide evidence for PCQ construct validity.

Table 2. *Inter-correlations between the dimensions of PsyCap*

Observed variables	1	2	3	4	5
Sample 1 ( $N = 665$ ) vs. Sample 2 ( $N = 304$ )					
1. Self-efficacy	-	.66**	.65**	.43**	.82**
2. Hope	.65**	-	.70**	.45**	.85**
3. Resilience	.61**	.64**	-	.57**	.89**
4. Optimism	.49**	.63**	.58**	-	.75**
5. PsyCap	.83**	.87**	.84**	.81**	-

Note. \*\* $p < .001$ . Sample 1 is presented under the diagonal.

The factorial structure of the PCQ was verified through exploratory factor analysis (EFA). The analysis was accomplished using Principal Axis Factoring followed by Direct Oblimin rotation and allowed extracting four factors, using parallel analysis (Horn, 1965). These factors explained 57.27% of the total variance. The first four eigenvalues were: 8.85, 1.90, 1.33 and 1.08. The first factor accounted 38.49% of the explain variance, and last three factors accounted 8.2%, 5.78% and 4.71% of the variance.

Moreover, we conducted a confirmatory factor analysis (CFA) on Sample 1 to test the factor structure of PCQ. Because of the PsyCap dimensions from PCQ had a non-normal distribution, we computed the results using the robust statistics (Satorra–Bentler scaled chi-square statistic, robust-statistic CFI, and RMSEA). For the interpretation of the fit indices we used the following rule: RMSEA value  $\leq .05$  suggests a good fit, an RMSEA

value of .05 –.08 suggests an adequate fit, an RMSEA value of .08 –.10 suggests a mediocre fit, and values  $> .10$  suggests an unacceptable fit (Browne & Cudeck, 1993).

Table 3 suggests that model M1 – second-order model, with PCQ items included in four factors and one general PsyCap factor had an acceptable fit ( $\chi^2(248) = 890.79$ ,  $p < .001$ ; CFI = .88; TLI = .86; RMSEA = .06, 95% CI [.06, .07], SRMR = .06). This model was significantly superior to all other alternative measurement models and also to the M7 – one factor as indicators of PsyCap with all the 24 items fit ( $\chi^2(252) = 1404.06$ ,  $p < .001$ ; CFI = .76; TLI = .74; RMSEA = .07, 95% CI [.08, .09], SRMR = .07). More support is given to a second order model structure of the PCQ than for the one-factor structure or four-correlated factor model. Nevertheless, the CFI and TLI values are acceptable, but not very good for any of the models tested. The RMSEA for Model 1 has a good fit as per the indication

above. The standardized factor loadings ranged from .61 to .82 for the self-efficacy subscale, .50 to .77 for the hope subscale, .40 to .75 for the resilience subscale, and .33 to .77 for the optimism subscale. The items with the lowest loading were item 13 (.40) and item 20 (.33). In Figure 1, the diagram of the estimated model is presented.

Table 3. *Fit indices and model comparisons for measurement and structural models*

Model	$\chi^2$	<i>df</i>	$\chi^2/df$	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i> [90% <i>CI</i> ]	<i>SRMR</i>	$\Delta\chi^2$	$\Delta df$
M1 – second-order model, with PCQ items, four factors and one general PsyCap factor	890.79**	248	3.59	.88	.86	.06 [.06, .07]	.06		
M2 – 4 factors as indicators of PsyCap, each of the four factors being correlated	902.24**	246	3.67	.86	.85	.06 [.06, .07]	.06	11.45	2
M3 - 4 factors (hope, resilience, optimism, and self-efficacy)	1906.40**	252	7.57	.68	.65	.10 [.09, .10]	.28	1015.61	4
M4 – 3 factors as indicators of PsyCap with hope and resilience merged	1006.57**	249	4.04	.84	.83	.07 [.06, .07]	.06	115.78	1
M5 – 3 factors as indicators of PsyCap with hope and optimism merged	1062.33**	249	4.27	.83	.81	.07 [.06, .07]	.06	171.54	1
M6 – 3 factors as indicators of PsyCap with optimism and resilience merged	1026.56**	249	4.12	.84	.82	.07 [.06, .07]	.06	135.77	1
M7 – one factor as indicators of PsyCap with all the 24 items	1404.06**	252	5.57	.76	.74	.08 [.08, .09]	.07	513.27	4

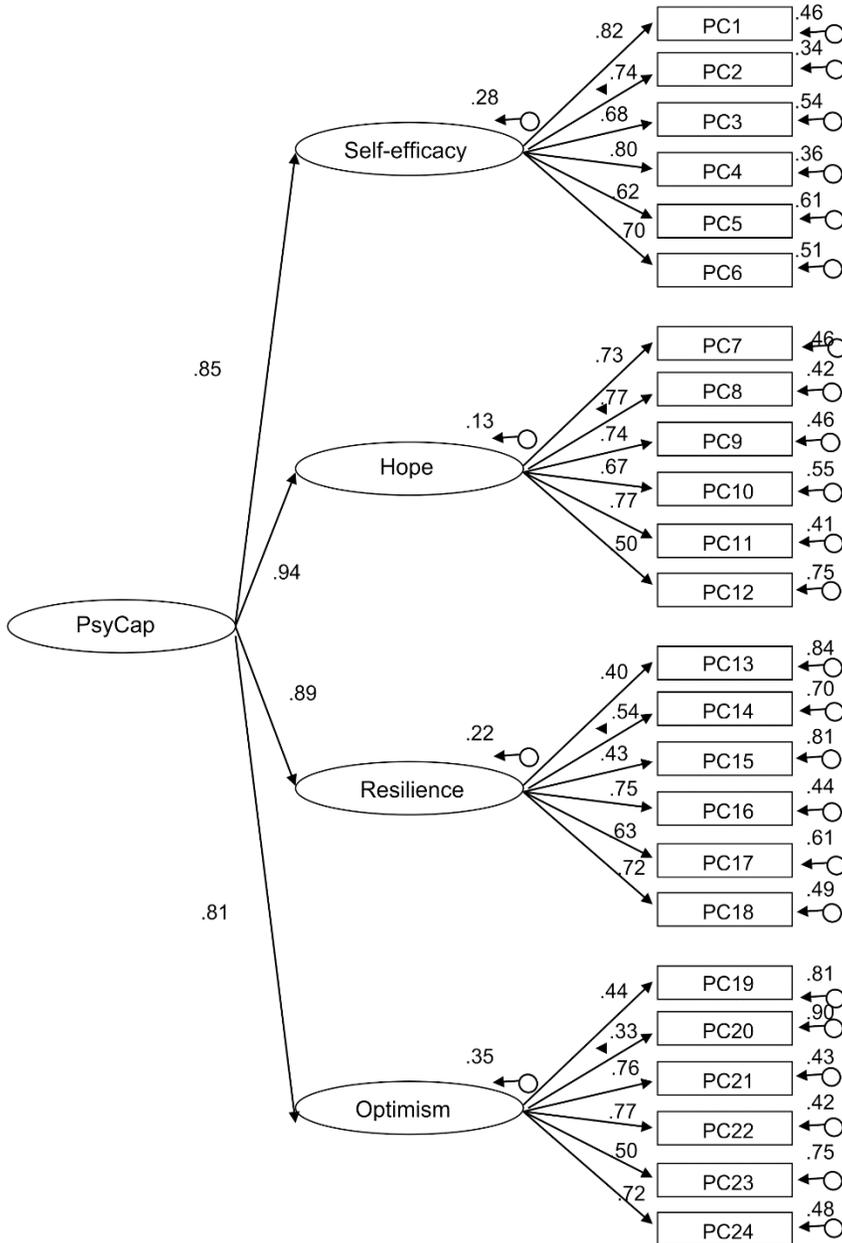


Figure 1. *M1 – second-order model, with PCQ items, four factors and one general PsyCap factor*

Overall, the results support the validity and the reliability of PCQ instrument on the Romanian population.

**Study 2**

Table 4 presents the descriptive statistics and reliabilities for Sample 2. Except for the optimism scale for Sample 2 ( $\alpha = .67$ ), the internal consistency values for each dimension of PsyCap ranged from adequate to high.

Table 4. Descriptive statistics and reliabilities for PsyCap dimensions for Sample 2

Observed variables	Sample 2		
	M	SD	$\alpha$
Self-efficacy	4.92	.71	.81
Hope	4.46	.67	.77
Resilience	4.88	.63	.71
Optimism	4.72	.62	.67
PsyCap	4.75	.53	.89

Note.  $N_2 = 304$

**The validity of PCQ.** To investigate the content validity of PCQ, we tested the relationships between the dimensions of PsyCap and other concepts (e.g., personality, well-being, and performance).

Firstly, we calculated the correlation matrix between PsyCap and five personality traits (see Table 5). The results obtained support the idea of the association PsyCap dimensions and the omnibus concept with extraversion, agreeableness, conscientiousness, and openness to experience

except for two cases with neuroticism (for self-efficacy and resilience). The correlations between PsyCap dimensions and openness to experience were higher than with each of the other four traits (e.g., with self-efficacy and optimism,  $r = .43$ ,  $p < .01$ ). PsyCap as an omnibus concept was positively related to openness to experience ( $r = .42$ ,  $p < .01$ ), conscientiousness ( $r = .27$ ,  $p < .01$ ), agreeableness ( $r = .24$ ,  $p < .01$ ), extraversion ( $p < .21$ ), and negatively to neuroticism ( $r = .18$ ,  $p < .01$ ).

Table 5. Correlation coefficients between the dimensions of PsyCap with personality on Sample 2

Observed variables	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to experience
1. Self-efficacy	.14*	.15*	.19**	-.08	.43**
2. Hope	.18**	.24**	.30**	-.16*	.28**
3. Resilience	.12*	.19**	.24**	-.10	.39**
4. Optimism	.23**	.19**	.14*	-.24**	.43**
5. PsyCap	.21**	.24**	.27**	-.18**	.42**

Note.  $N_2 = 304$ ; \* $p < .05$ ; \*\* $p < .01$  (two-tailed)

Secondly, we calculated the correlation matrix between PsyCap and well-being, and performance (Table 6). All the results obtained were positive and significant. The strongest relationship from all the organizational outcomes was between the dimensions of PsyCap and work engagement as an indicator of employee's well-being: with self-efficacy ( $r = .40$ ,  $p < .01$ ), with hope ( $r = .55$ ,  $p < .01$ ), with resilience ( $r = .39$ ,  $p < .01$ ), with optimism ( $r = .50$ ,  $p < .01$ ), and PsyCap ( $r = .56$ ,  $p < .01$ ).

Moreover, optimism was strong related with mental health ( $r = .51$ ,  $p < .01$ ) and moderate related to physical health ( $r = .40$ ,  $p < .01$ ). Hope ( $r = .42$ ,  $p < .01$ ), resilience ( $r = .42$ ,  $p < .01$ ) and PsyCap as an omnibus concept ( $r = .45$ ,  $p < .01$ ) were moderate associated with performance. The results show also that PsyCap is strongly related to well-being and performance than the four dimensions.

Table 6. Correlation coefficients between the dimensions of PsyCap with well-being, and performance on Sample 2

Observed variables	Work engagement	Mental health	Physical health	Performance
1. Self-efficacy	.40**	.19**	.19**	.36**
2. Hope	.55**	.40**	.36**	.42**
3. Resilience	.39**	.33**	.30**	.42**
4. Optimism	.50**	.51**	.40**	.24**
5. PsyCap	.56**	.45**	.39**	.45**

Note.  $N_2 = 304$ ; \* $p < .05$ ; \*\* $p < .01$  (two-tailed)

## Discussion

PsyCap is relatively a new concept and researchers are focusing on developing it conceptually and operationally. The first objective of this study was to investigate and validate the psychometric properties of the Romanian version of PCQ. The results obtained suggest that this version of PCQ has acceptable psychometric properties. Confirmatory factor analysis reveals that the factor models found in the American sample replicate in the Romanian sample. However, the second-order model fitted better our data compared with the four factors as indicators of PsyCap proposed by Luthans et al. (2007). Other validations of PCQ on other populations (e.g., Portuguese; Monico, Pais, dos Santos, & Santos, 2014; Egypt; Badran & Youssef-Morgan, 2013; South Africa; Görgens-Ekermans & Herbert, 2013) obtained different factor structure. Our model, the second-order model with all the 24 items, also was found on the Egyptian sample (Badran et al., 2013). However, the fit indices obtained on this data are acceptable compared with the indications provided by Browne et al. (1993), but not so good. Only a less rigorous analysis of the fit indices will accept the hypothesized model (second-order mode) as an appropriate one. Comparable results for the confirmatory factor analysis on PCQ were obtained in previous research studies (CFI = .91; RMSEA = .06, SRMR = .06; Badran et al., 2003; CFI = .87; RMSEA = .09, Cheung et al., 2010; CFI = .87; RMSEA = .07; Rego et al., 2010). Consistent with other results of the item analyses, our analysis found that item 13 and 20 had the lowest loadings (Görgens-Ekermans et al.,

2013). Those items are reversed scored and seem less efficient in measuring two of PsyCap dimensions (resilience and optimism).

Secondly, the internal consistency and test-retest reliabilities were appropriate and similar to the ones found in other studies using translated versions of PCQ (Görgens-Ekermans et al., 2013; Luthans, Avolio, et al., 2007; Mónico et al., 2014). To preserve the integrity of PCQ as validated previously, we maintained the same construction of the questionnaire in both studies although on a sample from Study 2 the optimism scale had a low Cronbach  $\alpha$ . Those results are in line with the previous instrument validation (dangerous driving measure; Ilescu & Sărbescu, 2013). The test-retest statistics for the PsyCap dimensions were similar to the ones obtained previously (Luthans, Avolio, et al., 2007). Those results suggest that PsyCap is “state-like” and could be developed through interventions.

Thirdly, the correlation coefficients between PsyCap as an omnibus concept with its dimensions is significant are high. As practical implications, these strong correlations suggest that we can use the total score for assessing PsyCap as a unitary concept, not only the four dimensions (Luthans, Avolio, et al., 2007).

Finally, we tested the relationship between PsyCap and different concepts such as personality, well-being, and performance. The results obtained on the Romanian sample support the association between PsyCap and Big Five personality traits. However, the scale neuroticism did not correlate significantly with few of the PsyCap dimensions. PsyCap and personality traits seem to be related, but

different concepts. Our results are in line with previous research that suggests that both PsyCap and personality traits (e.g., extraversion and conscientiousness) are related to organizational outcomes such as job satisfaction but in different manners (Luthans, Avolio, et al., 2007). PsyCap predicted the unique variance in job satisfaction beyond the two personality traits. Moreover, PsyCap is positively associated with varying concepts of well-being, such as work engagement, mental and physical health (Krasikova, Lester, & Harms, 2015; Luthans, Youssef, Sweetman, & Harms, 2013). Also, as expected, a positive relationship between PsyCap and performance was found (Avey et al., 2011; Luthans, Avey, Avolio, & Peterson, 2010). Employees with a high level of PsyCap tend to be more engaged in their work and healthier than the others with low PsyCap level. Moreover, they obtain a better result and manage successfully to fulfill their demands.

### **Practical implications**

Findings from this study have several practical implications for the usage of PCQ inside the organizations. First, the results for the construct validity of PCQ will help the organizations from Romania to evaluate PsyCap with better accuracy and strength. Also, this result implies a better view for the need of PsyCap interventions at the workplace. Managers will be able to focus on diagnosing and developing, if it is necessary, those real personal resources at their subordinates. Moreover, the management will be more aware of practices and procedures that diminish personal resources and change them if the case.

Second, the relation between PsyCap and personality will help the managers to interfere if an employee is at risk and there are changes of improvement. For instance, an employee that has an eroded positivity could be included in training sessions to develop PsyCap.

Another practical implication could be that the results provide insights into the link between PsyCap components and desirable outcomes. Managers will be able to improve specific PsyCap capacities through procedures, training, and other activities to

enhance employees well-being or performance. Last but not least, PCQ will offer management, human resources department or other stakeholders a full image of employee's positivity and personal capacities.

### **Limitations**

Several limitations should be addressed. Firstly, one noteworthy limitation could be the usage of a single sample (e.g., employees) to validate PCQ on the Romanian sample. Several different samples are recommended to be used to extend the external validity of our results just like in previous research (e.g., student sample, employee sample; Luthans, Avolio, et al., 2007).

Secondly, the optimism scale ( $\alpha = .67$ ) for Sample 2 did not reach the adequate internal consistency. A similar result was obtained for optimism scale ( $\alpha = .69$ ) in a study conducted by Luthans, Avolio and their colleagues (2007).

Thirdly, the fact that PsyCap tested in relationship with other personal resources (i.e., organizational self-esteem) weakens the results about construct validity. Other individual capacities that are related theoretically could have provided additional information about the degree to which PCQ measures PsyCap.

Fourthly, another limit is the lack of use of alternative instruments for the PsyCap dimensions. The small reliability score for the optimism and resilience dimensions could have been compared with the scores from the established questionnaire on the same sample.

Finally, a limit could be the limited extent of variables with which we tested the content validity of PCQ. Besides, examining the positive associations between PsyCap and well-being and performance, we could have tested the relationship on negative concepts, such as burnout, counterproductive organizational behavior, or turnover intention.

### **Conclusion**

Our findings extend previous research on the conceptualization and psychometric properties of PsyCap on the Romanian population. The PCQ fits the organizational environment from Romania.

Moreover, the findings of this study imply also practical aspects. The fact that PsyCap is rather 'state-like' (Avey et al., 2010) and the positive results of the PsyCap interventions (Luthans et al., 2008; Luthans et al., 2010) in enhancing well-being and performance encourage the usage of PsyCap interventions. Employees with high levels of PsyCap tend to be more efficacious, hopeful, resilient, and optimistic, and manage to cope with stressors and to the dynamic environment of the nowadays organizations (Luthans, Avolio, et al., 2007).

In conclusion, the two studies provide evidence that PsyCap can be measured with the Romanian version of PCQ and it is related to concepts such as personality, well-being, and performance.

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