

RESEARCH ARTICLE

Psychological capital, health, and performance: the mediating role of burnout

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Abstract

Psychological capital (PsyCap) is a state-like concept with roots in positive psychology. This study investigated the potential role of PsyCap, as a personal resource, in increasing the level of employees' health (mental and physical) and performance. Based on the Job Demand-Resources theory, the mediating effect of burnout was examined using self-report data. The models were tested on 304 Romanian employees (51% women) from Information Technology & Communications (IT&C) companies, using structural equation modeling. The analysis found that burnout partially mediates the relationship between PsyCap and health (mental and physical) as well as the relationship between PsyCap and performance (task and contextual). The results highlight the role of PsyCap, as a personal resource, in health, and performance. These results are useful for implementing an evidence-based intervention to improve the level of PsyCap in IT&C employees. An improvement in PsyCap would reduce burnout and enhance well-being and performance. This study highlights the mediating role of burnout in the relationship between psychological capital and two distinct outcomes: health and performance. Thus, this research helps identify further mediators of the relation between PsyCap and health and performance.

Keywords

psychological capital, burnout, health, performance

Every organization wants to have healthy and performing employees, but this is not easy to obtain or maintain. Based on the Job Demands-Resources (JD-R) theory, personal resources are positive self-evaluations related to resilience (Hobfoll, Johnson, Ennis, & Jackson, 2003) that increase the employees' ability to cope with stress, strain, or challenges (Luthans, Avey, Avolio, Norman, & Combs, 2006). Employees with high levels of these personal resources believe they have control over their work environment and can, therefore, better handle their job demands. Psychological capital (PsyCap) is a personal

resource, that can protect employees against burnout and contribute to individual and organizational success (Laschinger & Fida, 2014). PsyCap, as a second-order concept, is formed by the combination of four personal characteristics, namely self-efficacy, hope, optimism, and resilience (Luthans, 2002). PsyCap is strongly associated with performance (Avey, Reichard, Luthans, & Mhatre, 2011), and also with well-being (Avey, Luthans, Smith, & Palmer, 2010).

In the last years, research done on PsyCap has tended to focus not just on antecedents and outcomes of PsyCap, but also on the mediators

of the relationship between PsyCap and outcomes (such as psychological empowerment; Avey, Hughes, Norman, & Luthans, 2008). One possible mediator mechanism is burnout, which is experienced by a wide range of employees, from client-based professions to employees in many autonomous jobs, like computer programmers (Maslach, Schaufeli, & Leiter, 2001). Furthermore, the effects of burnout are visible both on employee's health and performance. Employees experiencing burnout may suffer from sleep disturbances, physical illnesses, and depression (Rudman & Gustavsson, 2011). Additionally, organizations are negatively impacted if their employees develop burnout. This is because burnout syndrome reduces the employee's task performance and increases turnover intentions (Maslach et al., 2001).

The present study is based on the JD-R theory (Bakker & Demerouti, 2017), which suggests that the lack of job and personal resources will reduce the ability of the employees to cope with high job demands. This pathway most probably will lead to burnout syndrome (i.e., strain pathway; Demerouti & Bakker, 2011), burnout being the critical mechanism between personal and organizational outcomes. Moreover, this model focuses on employees' health and performance via burnout (the health impairment process) and can be applied to a broad range of professions, such as IT, teachers, nurses, or social workers (Llorens, Bakker, Schaufeli, & Salonova, 2006).

The JD-R theory (Bakker & Demerouti, 2017) highlights the role of resources on their own (e.g., personal resources), not only for fulfilling the job demands and explaining the occurrence burnout (Gorgievski, Halbesleben, & Bakker, 2011). For example, the perception of a lack of personal resources (e.g., self-efficacy and optimism) will cause manifestations characterized by burnout (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Hence, personal resources, such as PsyCap, could bring vital aid in an environment where burnout is commonly met.

This study contributes to the understanding of the relationship between PsyCap and outcomes (e.g., health and performance), from the standpoint of its mediators, mainly

focusing on the IT Romanian workforce. As Newman and his colleagues (2014) advocated, more research "is needed to help us understand the underlying mechanisms through which PsyCap influences workplace outcomes" (p. 131). This is crucial for the theoretical development of the PsyCap literature and provides practical implications for organizations to train their employees in managing the organizational or individual crisis. Thus, the employee's PsyCap could be a source of sustainable competitive advantage for organizations.

Moreover, this study is based on a sample of IT&C professionals that work in Romania, a developing country with a dynamic labor market. Here, the demand for IT specialists is higher than the supply of people qualified in this field. Also, IT professionals are characterized by very high growth needs and are concerned with learning new technologies (Beecham, Baddoo, Hall, Robinson, & Sharp, 2008). IT professionals suffer from extensive projects and aggressive timelines (Messersmith, 2007), which could lead to high levels of job stress. In response to the above challenges, IT employees need to develop their personal resources (Avey, Luthans, & Youssef, 2010). Most of the previous research focused mainly on the relationship between job demands and resources that IT employees have to handle at the workplace, and job-related outcomes such as emotional exhaustion, physical health complaints, and cognitive well-being (Van de Ven, de Jonge, & Vlerick, 2014; Van de Ven & Vlerick, 2013; Van de Ven, Vlerick, & de Jonge, 2008).

Moreover, social capital as a job resource was linked to well-being, but not with emotional exhaustion, one of the dimensions of burnout (Janssens et al., 2018). These findings, in most cases, seem to converge, but there are other research questions to ask, for example, what the role of personal resources for an IT worker is. After reviewing the literature, we have not found any study investigating PsyCap and its relationship with burnout, health, and performance on IT professionals.

In the present study, we hypothesized and tested an integrative model with PsyCap as a distal predictor of both health complaints (mental and physical) and performance (task

and contextual), considering burnout as a mediator that links these pairs of variables. The sample for this study was composed of East European IT&C employees (i.e., Romanian). Therefore, our model provides researchers and practitioners a guide to creating a healthy and performance organizations in European culture.

PsyCap, health, and performance

Luthans and his colleagues (Luthans et al., 2007) proposed the concept of PsyCap, which is a second-order concept based on a combination of four personal characteristics that can be modified to enhance well-being and performance.

Self-efficacy is defined as the individual's belief of having the capacity to mobilize motivational, cognitive resources, and courses of action, to perform different activities within a specific context (Stajkovic & Luthans, 1998). For instance, employees with high self-efficacy that work in the IT&C field are more prone to be self-confident in troubleshooting specific IT situations, or merely solving easy tasks that are required to finalize a project (Lupşa & Virgă, 2018). *Optimism* is the general expectancy of a positive outcome (Carver & Scheier, 2002), combined with an attributional style that considers adverse events as temporary, external, and situation-specific while positive activities are considered to have lastingly, personal, and widespread causes (Seligman, 1998). In questionable circumstances at work, an optimistic IT employee will probably believe that things will get better. Thus, he or she will be motivated to pursue his or her goals and deal with difficult circumstances.

Moreover, employees with high optimism will be more likely protected from stress and will be healthier than the less positive ones (Mäkikangas, Kinnunen, & Feldt, 2004). *Hope* is defined as "a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)" (Snyder et al., 1991, p. 287). Hope implies the will to attain one's aims and the capacity to distinguish and follow the way to success (Snyder, 2000). An IT employee with

a high level of hope will consider that there are many ways to resolve a logic or a technical problem, and he or she will attempt to fulfill his or her professional goals. Finally, *resilience* is "the developable capacity to rebound or bounce back from adversity, conflict, and failure, or even positive events, progress, and increased responsibility" (Luthans, 2002, p. 702). A resilient IT employee will succeed in resolving hindrance demands (such as inadequate resources for writing code or debugging issues to code syntax, or role ambiguity in the project team) and will have the capacity to adapt in the face of changes in the external environment (Luthans, Vogelgesang, & Lester, 2006). Hindrance demands are a particular type of job demands in the JD-R model, which tend to be perceived by employees as obstacles to task accomplishment and personal growth (Podsakoff, LePine, & LePine, 2007). Using personal resources, IT professionals should be able to deal with hindrance demands, such as routine, role ambiguity, or organizational politics.

In our study, performance refers to the task and contextual performance. That is, when individuals invest energy into their work, but also in their work roles. Task performance reflects how well an individual performs the duties required by the job (Borman & Motowidlo, 1997). Furthermore, contextual performance is related to an individual's propensity to behave in ways that facilitate the psycho-social context of an organization (Borman & Motowidlo, 1993). PsyCap directly contributes to improvements in task performance (Abbas, Raja, Darr, & Bouckennooghe, 2014), as well as in contextual performance (Norman, Avey, Nimnicht, & Graber Pigeon, 2010).

A recent review (Newman et al., 2014) concluded that PsyCap is associated with desirable employee attitudes (i.e., job satisfaction, psychological well-being) and performance. Thus, previous research demonstrated a positive association between PsyCap and contextual performance, such as OCBs (Avey et al., 2008; Norman et al., 2010). Also, there is substantial evidence for the positive relationship between PsyCap and task performance, as it was indicated by

numerous studies using different measures of performance (Avey et al., 2011). Positive associations between PsyCap and self-, supervisor evaluations, and objective measures of performance were found in recent research (Avey, Nimnicht, & Graber Pigeon, 2010; Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011).

Within JD-R research, there are various approaches to integrate personal resources (Schaufeli & Taris, 2014). Personal resources are included as moderators or mediators in relation to job characteristics and outcomes in the JD-R theory (Bakker & Demerouti, 2017). Also, personal resources could be antecedents of job characteristics or act as a third variable that could explain the relationship between job characteristics and well-being. Despite this alternative, the most straightforward way of including such personal resources in the JD-R theory is to consider that personal resources have a direct impact on well-being (Grover et al., 2018; Taris et al., 2017). Thus, in our model, we chose to employ PsyCap, as an independent variable, to contribute to the explanation of different outcomes (performance and health). Based on the research of Grover and his colleagues (2018), PsyCap is associated with positive psychological well-being, which in turn exerts a direct effect on outcomes, as theorized by Schaufeli and Taris (2014). This is a step forward based on a review of Newman and his colleagues (2014) who “noticed inconsistencies with findings relating to the nature of the relationship between PsyCap and stress at work” (p. 128).

Personal resources are protective factors for mental health (Boey, 1999). Recent research assumed that PsyCap, as a personal resource, promoted well-being, and favorable health behaviors (Krasikova, Lester, & Harms, 2015; Luthans, Youssef, Sweetman, & Harms, 2013). An employee with a high level of PsyCap can explain situations in a broader positive manner (optimism). Also he will believe that he or she can productively accomplish tasks (self-efficacy), will be resilient and will manage obstacles by having energy and a goal in mind (hope). Thus, the health of the employee will be preserved during stressful events, also, which is relevant to the employee’s well-being. This study will

focus on both types of health complaints, mental and physical, which offers valuable information at the individual level. Consequently, we formulate:

Hypothesis 1. PsyCap is positively associated with performance (H1a) and is negatively associated with health complaints (H1b).

PsyCap and burnout

Burnout is defined as “a psychological syndrome involving chronic emotional and interpersonal stressors that individuals experience at work and their subsequent responses to their tasks, organizations, co-workers, clients, and themselves” (Swider & Zimmerman 2010, p. 487). In this study, we used core-burnout, with its two components: emotional exhaustion and cynicism (Bakker, Emmerik, & Euwema, 2006). Exhaustion refers to feelings of depletion and feeling down, resulting from overtaxing work. Cynicism or depersonalization appears when individuals mentally distance themselves from their work by generating dehumanizing perceptions of coworkers, tasks, or clients (Kahn, Schneider, Jenkins-Henkelman, & Moyl, 2006). We did not include the third dimension of burnout – personal accomplishment or inefficacy – because it implies less sense of competence at work. Thus it is a form of self-evaluation related to performance (Leiter, 1993) and has a separate role (Lee & Ashforth, 1996) from exhaustion (a type of strain) and cynicism (a form of defensive coping) in the burnout phenomenon.

Based on the JD-R model, personal resources such as self-efficacy and self-esteem be related to e burnout and work engagement (Xanthopoulou et al., 2007). Recent research revealed the direct influence of PsyCap on well-being (Grover et al., 2018), but did not find any support for the moderation effect of PsyCap between job demands or resources and outcomes. Thus, people with high levels of PsyCap have positive self-concepts that allow them to reframe the situation in a positive way, rather than trying to change the stressors (Rabenu, Yaniv, & Elizur, 2016). Research on PsyCap and burnout is scarce and was conducted mainly on samples of nurses and social workers. In a short series of studies,

Laschinger and his colleagues (Laschinger & Fida, 2014; Laschinger & Grau, 2012; Laschinger et al., 2012) identified that a high level PsyCap was negatively related to burnout (emotional exhaustion and cynicism). Similarly, Avey and his colleagues (Avey, Luthans, & Youssef, 2010) found that PsyCap was negatively related to cynicism. Thus, PsyCap is a crucial variable that may contribute to decreasing burnout and, consequently, increase health (physical and mental) (Estiri, Nargesian, Dastpish, & Sharifi, 2016; Laschinger & Fida, 2014; Laschinger & Grau 2012). Findings suggest that nurses with a higher level of PsyCap are less likely to experience burnout, as they have more personal resources to handle the hindrance demands and cope with workplace stress. Hence, it could be argued that employees with higher levels of PsyCap are likely to experience fewer feelings of exhaustion, tiredness, and frustration in their everyday work and interactions with clients (Herbert, 2011). Therefore, we hypothesized the following:

Hypothesis 2. PsyCap is negatively associated with burnout (H2).

Burnout as mediator

PsyCap contains a set of personal resources that could play a protective role in burnout development because it helps the employees to be better performers (Luthans & Youssef, 2004). Moreover, the JD-R theory (Bakker & Demerouti, 2017) posits burnout as a mediating mechanism of the relationship between demands and resources (e.g., personal resources) and performance. Thus, burnout could be the critical link concept that relates to PsyCap with performance and health as a component of the employee's well-being.

Based on previous research, PsyCap has a profound effect on reducing burnout (Estiri et al., 2016). Also, burnout, as a debilitating state, is associated with mental health problems (e.g., depression and anxiety) on the one hand, and physical health problems (e.g., sleep problems, impaired memory, neck, and back pain), on the other (Ahola, 2007; Rudman & Gustavsson, 2011). Moreover, exhaustion is significantly associated with

reduced performance (Taris, 2006; Virgá, Schaufeli, Taris, van Beek, & Sulea, 2019). Therefore, according to previous research and theoretical arguments, it is more likely that an employee from the IT&C field with a high level of PsyCap will experience fewer symptoms of burnout. Consequently, they will be healthier and will perform better in the workplace. Regularly, PsyCap as a positive resource was associated with positive outcomes, in general, and with well-being, in particular. One of the mechanisms behind the link between PsyCap to well-being is referred to as the quality of PsyCap (mainly the optimism dimension) of mitigation and overcoming negativity bias (Youssef-Morgan & Luthans, 2015). Using a combination of mechanisms such as positive appraisals and regularly replenished reservoirs of psychological resources, PsyCap can diminish the damaging effects of unrealistic goals and expectations, which can lead to burnout (Bakker & Oerlemans, 2012). The hypothetical model proposes a partially mediated relationship between PsyCap and outcomes (performance and health) *via* burnout. This hypothesis is grounded in the assumption that other mechanisms that can also explain the relationship between PsyCap and the two outcomes besides burnout (which may work simultaneously or separately). Our focus is on burnout as a negative mediator mechanism between PsyCap and outcomes (performance and health). Recent research indicated that coping with change and withdrawal are partial mediators between PsyCap and employees' well-being and performance in organizations (Rabenu et al., 2017). Moreover, previous research found evidence for the direct relationship between PsyCap and performance and health (Avey et al., 2011; Luthans et al., 2013). However, research in the area of mediators between PsyCap and outcomes is under development (Newman et al., 2014). Therefore, we formulated the following hypothesis:

Hypothesis 3. Burnout partially mediates the relation between PsyCap and performance (H3a) and partially mediates the relation between PsyCap and health complaints (H3b).

Method

Participants and procedure

We distributed 400 questionnaires to individuals from a private company in the IT&C field from Romania, in the online form. We used convenience sampling methods, and the sample was composed of programmers (42%), test engineers (36%), and web developers (22%). We previously obtained the IT company's management agreement and disseminated an online questionnaire with mandatory items via a link. All participants were informed of the general aim of the questionnaire and participated voluntarily. Only 76% of the respondents returned the entire questionnaires. Thus, 304 participants remained (51% women), aged between 19 and 60 years ($M = 32.12$, $SD = 9.52$). Their average work experience was 4.32 years ($SD = 8.19$), 38% of them had a Bachelor's degree, and almost 31% had a Master's degree.

Measures

Psychological capital was measured with the 24-item PsyCap Questionnaire (Luthans, Youssef, & Avolio, 2007). This questionnaire has four subscales, each with 6 items: *hope* ("At present, I am energetically pursuing my work goals"), *self-efficacy* ("I feel confident contacting people outside the company (e.g., suppliers, customers) to discuss problems"), *resilience* ("I can get through difficult times at work because I've experienced difficulty before"), and *optimism* ("When things are uncertain to me at work I usually expect the best"). All items were scored on a 5-point Likert-type scale (1 = *strongly disagree*, 6 = *strongly agree*). The PsyCap Questionnaire has previously been validated psychometrically in Romania (Lupșa & Virgă, 2018). Cronbach's alpha values of the PsyCap scale was adequate ($\alpha = .89$). Also, the Cronbach's alpha for each subscale was acceptable: hope ($\alpha = .77$), self-efficacy ($\alpha = .81$), resilience ($\alpha = .71$), and optimism ($\alpha = .71$).

Burnout was measured as core-burnout, with two subscales from the Maslach Burnout Inventory —General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). The scales used were emotional exhaustion (5

items; "I feel emotionally drained from my work"; $\alpha = .85$) and cynicism (4 items; "I have become more cynical about whether my work contributes anything"; $\alpha = .89$). All items were scored on a 7-point frequency scale (0 = *never*, 6 = *always*). The MBI-GS has been successfully validated psychometrically in Romania (e.g., Sulea et al., 2012). Cronbach's alpha for the burnout scale had good reliability in this study ($\alpha = .92$).

Performance was assessed with a 6-item adapted scale that comprises both task performance and contextual performance (Feuerhahn, Kühnel, & Kudielka, 2012). We have assessed performance using the rating of the employee from the perspective of the supervisors by modifying the general instructions (e.g., "Taking into consideration all aspects of your work, your direct supervisor would assess that..."). Task performance behavior was measured with the first three items. A sample of the item is ("The efficiency of your work is..."). The contextual performance, in particular organizational citizenship behavior directed at individuals, was measured with items 4 and 5 ("Your social behavior is..."). Organizational citizenship behavior directed at the organization was measured with item 6 ("Bring your ideas and improvement suggestions..."). All items were scored on 7-point Likert-type scale (1 = *below average*, 7 = *above average*). The Romanian version of this scale was evaluated using the standard back-translation technique (Brislin, 1970). Cronbach's alpha values of the performance scale were adequate ($\alpha = .89$) and also for the two subdimensions, task ($\alpha = .92$) and contextual performance ($\alpha = .70$).

Mental health complaints were measured with an MHI-5 item screening test (Berwick et al., 1991). All items (e.g., "During the past month, how much of the time have you felt calm and peaceful?") were evaluated on a 6-point scale (1 = *never*, 6 = *always*). A high score indicated poor mental health, and items 2 and 4 are reversed score (see Virgă & Iliescu, 2017). Cronbach's alpha values of the mental health complaints scale were adequate ($\alpha = .85$).

Physical health complaints were assessed with the 4 items proposed by Ware (1999). A sample of the item is: "I expect that my health will get worse in the near future.". All items

were scored on a 5-point scale (1 = *totally disagree*, 5 = *totally agree*). A high score signified poor physical health, and items 2 and 4 are reversed scores (see Vîrgă & Iliescu, 2017). Cronbach's alpha values of the physical health complaints scale were adequate ($\alpha = .81$).

Results

Statistical analysis

Since all the variables were latent, the data were analyzed based on the SEM framework in MPlus software (Muthén & Muthén, 2012). All variables had normal distributions (Skewness and Kurtosis < 1), therefore we tested the measurement and the structural models (for the partial mediation and the complete mediation). Firstly, we tested the measurement model using confirmatory factor analysis (CFA) and compared five models: M1 – the hypothesized model with four superordinate factors (PsyCap, burnout, performance and health complaints); M2 – a single factor model; M3 – a three-factor model (PsyCap and performance as separate factors and burnout, mental and physical health complaints in a single factor); M4 – an additional a three-factor model (PsyCap, burnout, and task, contextual performance, mental and physical health in a single factor as a singular outcome); M5 – a common-method model which is identical with M1, but has an additional latent factor encompassing all observed variables. Subsequently, we tested two structural models with burnout as a mediator: a hypothesized model for the partial mediation (M6), an alternative model for the total mediation (M7). For the structural models, we used the latent variables approach. We employed factor scores as indicators of the latent variables. Thus, the latent factor PsyCap

was compound by the four components, self-efficacy, resilience, hope, and optimism; burnout consisted of two observed dimensions, emotional exhaustion, and cynicism. Health complaints consisted of two dimensions, mental and physical health complaints, and performance was composed of two dimensions, task, and contextual performance. Model fit was assessed by using maximum-likelihood estimation. We reported three absolute fit indices (chi-square statistic; root mean square error of approximation, RMSEA; and standardized root mean square residual, SRMR) and two relative fit indices (Tucker-Lewis index, TLI and the comparative fit index, CFI). If a model had the following fit indices, it was likely to be more appropriate: RMSEA < .06; SRMR < .08; TLI and CFI > .95 (Hu & Bentler, 1999). The differences between the nested models were assessed comparing TLI, CFI, RMSEA, SRMR, and for the non-nested models, we used the Bayesian information criterion (BIC). Smaller values of BIC suggest that the model is more appropriate, and if Δ BIC is greater than 2, the data is in favor of the model with the smaller values of BIC (Fabozzi, Focardi, Rachev, & Arshanapal, 2014). Moreover, indirect effects were assessed using 5000 bootstrap samples with 95% confidence intervals.

Preliminary Analyses

Descriptive statistics, reliabilities, and the correlation matrix of study variables are presented in Table 1. The internal consistency coefficient had acceptable values. Almost all the correlations were statistically significant except the ones with the categorical variable, gender, and the continuous one, age.

Table 1. Descriptive statistics and correlation coefficients for the observed variables

| Observed variables | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--------------------------------|----------|-----------|-------|------|--------|--------|--------|--------|--------|-------|--------|--------|-------|-------|
| 1. Gender | - | - | - | | | | | | | | | | | |
| 2. Age | 32.22 | 20.86 | -.05 | - | | | | | | | | | | |
| 3. Self-efficacy | 4.92 | .71 | .09 | .14* | (.81) | | | | | | | | | |
| 4. Resilience | 4.72 | .62 | -.01 | .05 | .56** | (.71) | | | | | | | | |
| 5. Optimism | 4.59 | .72 | -.01 | -.01 | .47** | .46** | (.71) | | | | | | | |
| 6. Hope | 4.88 | .63 | .06 | .03 | .55** | .55** | .63** | (.77) | | | | | | |
| 7. Emotional exhaustion | 2.23 | 1.65 | -.01 | -.05 | -.19** | -.29** | -.42** | -.38** | (.85) | | | | | |
| 8. Cynicism | 2.09 | 1.72 | -.03 | .05 | -.15** | -.21** | -.41** | -.35** | .80** | (.89) | | | | |
| 9. Task performance | 5.64 | 1.17 | .06 | .01 | .32** | .41** | .21** | .35** | -.33** | .31** | (.92) | | | |
| 10. Contextual performance | 5.50 | 1.00 | .16** | .04 | .33** | .36** | .34** | .41** | -.40** | .34** | .63** | (.70) | | |
| 11. Mental health complaints | 2.44 | .90 | -.01 | -.04 | -.19** | -.33** | -.52** | -.40** | .55** | .51** | -.22** | -.30** | (.85) | |
| 12. Physical health complaints | 2.55 | .77 | .01 | -.05 | -.19** | -.30** | -.41** | -.36** | .44** | .34** | -.22** | -.33** | .57** | (.81) |

Note. *N* = 304; Gender (male = 1, female = 2); **p* < .05; ***p* < .01 (two-tailed); Cronbach's α coefficients are presented on the main diagonal.

Measurement Models

Before testing the hypotheses, we conducted a confirmatory factor analysis (CFA). The CFA revealed that the first four-factor model (M1) had an acceptable fit and obtained significant better fit indices than the other four models: single-factor model (M2) had poor fit indices; three-factor model (M3) with burnout and health complaints in a single factor also had poor fit indices; three-factor model (M4) with performance and health complaints in a single factor had poor fit indices; common method factor model (M5) also had poor fit indices.

Structural Models

Thus, we continued by testing the structural models (see Table 2). A confounder analysis was performed to test if gender and age could be control variables. Firstly, we tested the associations between the two control variables and outcomes. We found that only gender was

significantly associated with performance, so we continued only with the gender variable. Secondly, we analyzed the hypothesized model with gender as a control variable. Gender predicted neither the mediator nor one of the outcomes (health). The fit indices for this model were poorer ($\Delta\text{BIC} = 4.31$) ($\chi^2(43) = 138.30$, $p < .001$; $\text{TLI} = .89$; $\text{CFI} = .93$; $\text{RMSEA} = .09$, 95% CI [.07, .10], $\text{SRMR} = .05$; $\text{BIC} = 12048.51$) than the hypothesized model (M6: $\text{BIC} = 12044.20$). Thus, we can conclude that the hypothetical model is superior to the model with gender as a control variable.

Comparing the two structural models that have burnout as a mediator, the hypothesized model (M6) has better fit indices than the alternative model (M7). The only acceptable model was the hypothetical one (M6).

Table 2. Fit indices and model comparisons for measurement and structural models

| Model | χ^2 | df | χ^2/df | CFI | TLI | RMSEA [90% CI] | SRMR | $\Delta\chi^2$ | Δdf |
|---|----------|----|-------------|-----|-----|-------------------|------|----------------|-------------|
| Measurement model | | | | | | | | | |
| M1 - hypothesized model with four super-ordinate factors | 100.11** | 29 | 3.45 | .95 | .92 | .09 [.07, .11] | .05 | | |
| M2 - single-factor model | 382.97** | 35 | 10.94 | .56 | .44 | .18 [.17, .20] | .14 | 282.86 | 6 |
| M3 - a three-factor model (burnout and health complaints as a factor) | 97.46** | 32 | 3.05 | .92 | .88 | .08 [.06, .10] | .07 | 2.15 | 3 |
| M4 - a three-factor model (performance and health complaints as a factor) | 93.96** | 32 | 2.93 | .92 | .89 | .08 [.06, .10] | .07 | 6.15 | 3 |
| M5 - common method factor model | 158.14** | 30 | 5.27 | .81 | .72 | .12 [.10, .14] | .29 | 58.03 | 1 |
| Structural model | | | | | | | | | |
| M6 – partially mediation model (hypothesized model) | 100.52** | 30 | 3.35 | .95 | .92 | .09 [.07, .11] | .05 | | |
| M7 – total mediation model | 164.73** | 32 | 5.14 | .90 | .86 | .12 [.10, .14] | .10 | 64.21 | 2 |

Note. $N=304$. For the M2-5 models the comparison is versus M1, while M7 is compared to M6; ** $p < .001$

As can be seen from Figure 1 for the hypothesized model (M6), PsyCap was negatively related to health complaints ($\beta = -.38$, $p < .001$) and positively related to performance ($\beta = .44$, $p < .001$). Hypothesis 1a and 1b were supported by our data. In addition, PsyCap was negatively associated with burnout ($\beta = -.47$, $p < .001$) and Hypothesis 2 is confirmed.

Moreover, burnout was positively related to health complaints ($\beta = .51$, $p < .001$), and negatively to performance ($\beta = -.27$, $p < .001$). Additionally, burnout significantly mediated the relationship between PsyCap and both pairs of outcomes, while the direct relationship remained significant for both outcomes. Thus, consistent with Hypothesis

3a, burnout partially mediated the relationship between PsyCap and performance (indirect effect = .13, 95% CI [.07, .19]). Moreover, as stipulated by Hypothesis 3b, burnout partially mediated the relationship with health complaints (indirect effect = -.24, 95% CI [-.32, -.17]). The hypothesized model was supported by our data, and the standardized estimates for each relationship are presented in Figure 1. To sum up, the hypothesized model explained the variance of the mediator, burnout, ($R^2 = .23$), and the two outcomes, performance ($R^2 = .39$) and health ($R^2 = .58$) considerably.

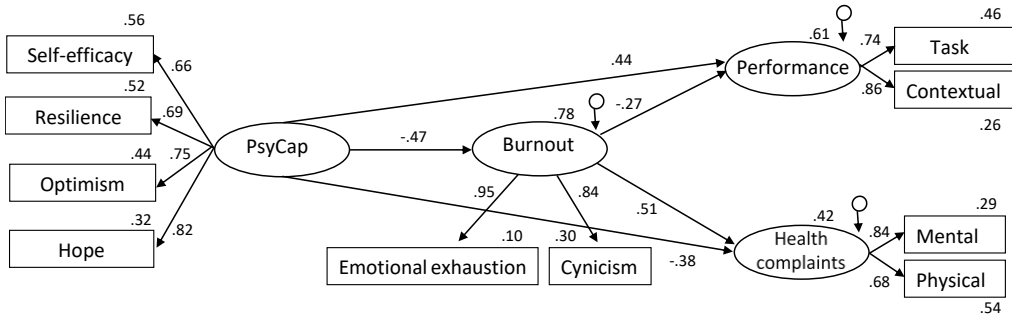


Figure 1. The results for the hypothesized model.

Table 3. Standardized indirect effects with bootstrapped 95% confidence intervals

| Independent variable | Mediator | Dependent variable | Estimate | 95% CI |
|----------------------|----------|----------------------------|----------|--------------|
| PsyCap | Burnout | Health complaints | -.24** | [-.32, -.17] |
| | | Mental health complaints | -.20** | [-.27, -.14] |
| | | Physical health complaints | -.17** | [-.22, -.11] |
| | | Performance | .13** | [.07, .19] |
| | | Task performance | .10** | [.05, .14] |
| | | Contextual performance | .11** | [.06, .17] |

Note. **p < .001

Discussion

The purpose of this research was to study PsyCap in relationship to health and performance through burnout. The results were concordant with the hypotheses. Firstly, consistent with our predictions, we found that PsyCap was related to performance and health. Romanian IT employees who are self-efficacy, resilient, and optimist are more performant and tend to have good health. Employees with a high level of PsyCap are resilient and self-efficacy, can productively accomplish tasks, and manage obstacles with a goal in mind. Those results are in line with other research, which demonstrated that these personal resources should be helpful to maintain their health and obtain performance on the job (Krasikova, et al., 2015; Grover et al., 2018).

Secondly, we observed a negative relationship between PsyCap and burnout. Thus, PsyCap, as personal resources, was negatively associated with burnout, indicating

that employees who tend to be less optimistic and resilient at work are more prone to experience burnout. These individuals have a favorable view of themselves, are confident and resilient, and these help them to handle the hindrance demands and cope with workplace stress. Thus, for Romanian IT employees, it appears PsyCap has a significant effect on reducing burnout. This is in line with the JD-R model (Bakker & Demerouti, 2017), which suggests that personal resources (e.g., hope, optimism, resilience or self-efficacy) are related to burnout in the health impairment process (Mäkikangas et al., 2004; Virgă, Baci, Lazăr, & Lupşa, 2020).

Thirdly, according to the JD-R theory (Bakker & Demerouti, 2017), PsyCap, as a personal resource, could be related to lower levels of burnout among Romanian IT employees. Thus, PsyCap functions as a positive psychological state that can be developed to protect individuals against challenges in their work. These results bring

more evidence that PsyCap is associated not only with low burnout but also with a lower occurrence of health problems. At the same time, PsyCap could play a decisive role in performance, in the context of a low level of burnout. Moreover, the JD-R theory (Bakker & Demerouti, 2017) suggests the mediating role of burnout in the relationship between resources and demands with job-related outcomes. In this study, we focused mainly on a personal resource, PsyCap, and two outcomes (e.g., performance and health).

Taken separately, our findings are in line with previous research (Estiri et al., 2016; Krasikova et al., 2015; Luthans et al., 2013). This study could be considered an initial attempt to integrate two types of outcomes in a model that has PsyCap as a predictor. These two types of outcomes have an impact at the individual level (health) and the organizational level (performance). Moreover, burnout partially mediated the negative relationship between PsyCap and health complaints (mental and physical), and the positive relationship between PsyCap and performance (Ahola, 2007). Employees from the IT&C field with high levels of these personal resources believe they have control over their work environment and can, therefore, better handle job demands.

Suggestions for further research

Future research could focus more on the effective mechanisms of PsyCap and provide more elaborate guidance on this new topic. Longitudinal studies could further strengthen our conclusions and would create further evidence for the nature of the relationships between PsyCap and health and performance. We encourage researchers to examine burnout as a process developing over time, using a daily longitudinal study design, and to evaluate the role of PsyCap in this process.

Also, future research should test other mediators to provide a broader image of the processes that link PsyCap to health and performance (De Waal & Pienaar, 2013). The relation between PsyCap and our outcomes was only partially explained through burnout, thus allowing for other parallel mechanisms to be tested, such as work engagement (Simons

& Buitendach, 2013), or the recently introduced construct of social networks (Luthans, Norman, & Jensen, 2007). Moreover, as scholars will develop a higher number of research studies on this topic, a meta-analysis could be performed to find reliable mediators in the workplace environment that link PsyCap and organizational outcomes. Also, this kind of meta-analysis could clarify which of the personal resources have the most critical role, through which are the mediators functioning.

In future researches, other personal characteristics (personality traits, core-self evaluations, or personal demands) should be investigated in relation to burnout, performance, and health to extend the conclusions of this study and the implications related to JD-R theory.

From a cultural perspective, this study showed that PsyCap is useful in battling burnout among Romanian IT professionals. Cross-cultural studies could also be conducted to find if the hypothetical model is replicated in different countries, among employees with the same job. There is a great need for research on PsyCap in other cultures and contexts to generalize its importance in the workplace. The Romanian labor market in the IT field is willing to absorb as many professionals as possible, as there are many jobs in this field, and companies hire students to finalize projects. In this context, it would be essential to find out if the impact of the developing IT labor market dynamically and uncertainly exercises psychological repercussions. Also, it should be interesting for additional research to examine whether our findings can be generalized to employees from other backgrounds, or employees in other jobs.

Practical implications

The human resource management in Romania could benefit from our findings as PsyCap was scarcely studied on East - European populations. A recent study found that employees from Romania with a high level of PsyCap experience lower levels of cynicism when they have a high level of psychological detachment (Virgă & Paveloni, 2015). Our study provided evidence for the relation

between PsyCap and burnout (emotional exhaustion and cynicism), and for the relationship between PsyCap and two critical outcomes: health and performance. Moreover, the status and the role of the IT&C workers in the Romanian market are privileged, but they still have to cope with various demands. At a macro level, in Romania, there is a lack of personnel in this field, and even students or entry-level IT employees are hired on experimented positions. At a micro level, the job demands are high, as the IT employees need to fulfill complicated cognitive tasks, to keep up with final deadlines, must handle high levels of workload, or learn new technologies. Therefore, an employee in this profession is prone to develop manifestations of burnout (Maudgalya, Wallace, Daraiseh, & Salem, 2006).

The results highlight the importance of PsyCap, as a malleable resource, in achieving performance and health at the workplace, simultaneously. The practical implications of our findings could be in designing an intervention on PsyCap to reduce health complaints and to enhance performance. Human resources practitioners could invest in strengthening personal resources, such as PsyCap, through evidence-based interventions, which could protect the employees from burnout, and bring benefits both for employees and the organization (Luthans et al., 2013; Meyers & van Woerkom, 2017).

These results provide empirical evidence to develop and implement organizational strategies to enhance IT employees' well-being and performance, according to previous theory and research. In initial research, Luthans and his colleagues (Luthans, Avey, Avolio, Norman, & Combs, 2006) argued that the face-to-face PsyCap Intervention (PCI) increases employees' PsyCap, and also has a financial impact and substantial return investment. In addition to the traditional face-to-face group intervention, other settings are proposed, such as web-based individual training (Luthans, Avey, & Patera, 2008). Also, based on the JD-R model, a job crafting intervention was developed, which implies a series of proactive behaviors related to job characteristics, aimed at seeking resources, seeking challenges, and reducing demands

(Oprea, Barzin, Virgă, Iliescu, & Rusu, 2019). Thus, the combination of training programs for increasing PsyCap and job crafting, to diminish burnout, may help prevent health complaints and low performance (van Wingerden et al., 2017). The combinations of online and face-to-face interventions could be more appropriate for IT employees training related to PsyCap and job crafting. Research suggests that adding burnout-focused content related to job crafting in PsyCap workshops (Luthans, Avey, et al., 2006) could be a useful strategy to reinforce the effectiveness of this intervention. Thus, IT employees could attend small-group workshop sessions, composed of specific exercises designed to develop specific components of PsyCap (hope, optimism, self-efficacy, and resilience) (Luthans, Avey, et al., 2006). Based on a recent meta-analysis, HR practitioners could use PCI intervention to improve PsyCap as global construct. Also, could use positive psychology interventions (for self-efficacy and hope), and also stress management programs (for self-efficacy) (see Luþsa, Virgă, Maricutoiu, & Rusu, 2019). Also, IT professionals could develop, in online sessions, a job crafting plan to redesign their job according to their capabilities. Therefore, this study encourages managers and HR practitioners to establish human resource management practices, such as training to develop employees' PsyCap as a personal resource, combined with employee programs oriented to job crafting for improving performance and health.

Limitations

The results of this study should be evaluated, considering several limitations. One of the limits is the cross-sectional design. Therefore, the relations found do not involve causal inferences. Concerning causality, we cannot be sure that PsyCap causes burnout and/or that burnout causes health complaints and decreases performance. While these linkages are consistent with the literature on burnout (Maslach et al., 2001; Schaufeli & Bakker, 2004), it is possible that employees who suffer from burnout have negative perceptions of their personal resources, or that the lack of own resources could cause burnout. Another limit could be the self-report data and the use

of subjective data due to the risk of common method bias. Although several of the variables have a individual nature (e.g., PsyCap, burnout) and self-report measures are indicated, several of the variables could have been operationalized as objective data (e.g., objective health and performance indicators) or data from other sources (e.g., supervisor, coworkers) can be included to preclude this risk. The performance was measured using a different approach: the employees offered responses from the manager's point of view about their performance. Those ratings are strongly associated with supervisors' ratings rather than to the employees' self-ratings about their performance (Schoorman & Mayer, 2008).

An additional limit could be the fact that we evaluated the global constructs (e.g., PsyCap as a composite of self-efficacy, optimism, resilience, and hope), and we cannot compile the effect for each factor on the outcomes (e.g., task and contextual performance). Therefore, we can only find general relationships between the four concepts (i.e., PsyCap, burnout, performance, and health complaints).

Conclusions

The present study has shown that PsyCap is a distal antecedent of health and performance through burnout in the practical context of Romanian IT&C employees. It appears that PsyCap plays an essential role in protecting the employee from burnout because employees with high self-efficacy, resilience, optimism, and hope are less likely to become emotionally exhausted and cynical about their work. This fact, in turn, leads the employee to perform better and to be mentally and physically healthy. These findings could be used as a starting point to create and implement different interventions to enhance employee's resources such as PsyCap, due to its contribution to achieving and maintaining well-being and performance inside organizations.

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