

Disentangling the elements of PsyCap as drivers for work, organization and social engagement in knowledge-intensive work

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Abstract

Purpose

In response to a growing interest in worker well-being in a worklife which is experiencing fundamental transformations, this paper builds and tests a research model on the role of psychological capital in three different forms of engagement at work. Engagement at work has been identified as one of the most significant drivers of successful work performance.

Design/Methodology/Approach

Using a quantitative research design, data were collected from 396 highly specialized knowledge workers through anonymous questionnaires. Research hypotheses were tested with linear models.

Findings

Analysis results indicate that all three forms of engagement are affected by psychological capital which consists of self-efficacy, resilience, hope, and optimism, but the effect of individual dimensions is not the same for different forms of engagement at work.

Practical implications

It is argued that paying more attention to personal resources, such as the dimensions of psychological capital, and acknowledging diversity among individual workers offer possibilities for increasing employee performance. HR personnel can benefit organizational performance by boosting different dimensions of employees' psychological capital for different engagement

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3 purposes.
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6 **Originality/value**
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10 This paper takes a wider perspective on engagement at work, arguing that also organization
11 engagement and social engagement together with work engagement are important factors for
12 employee well-being and performance in work society.
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17 **Keywords**
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21 Work engagement, organization engagement, social engagement, psychological capital,
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23 knowledge work
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Introduction

Worklife as we know it is facing fundamental transformations. Globalization and digitalization (Choi, 2020; Lucio and MacKenzie, 2022), as well as various forms of temporary organizing (Spreitzer *et al.*, 2017) are among the key drivers of this change. A fundamental workforce group that faces these changes is knowledge workers—professionals who use “a combination of creativity, abilities, talents, skills, and knowledge towards the eventual production of products and services” (Loo, 2017, p. 128). In the current age of the platform economy, many knowledge workers are expected by their superiors to independently design and carry out their work tasks (Maden, 2015). In many cases, knowledge workers should be willing to give up the security of traditional steady work relationships and adjust to selling their expertise on a case-by-case basis (Ashford *et al.*, 2018). In these challenging circumstances, knowledge workers’ psychological connection with their work is gaining increasing significance (Bakker *et al.*, 2011; Albrecht *et al.*, 2015), and their well-being becomes even more important.

Engagement has been proposed as a key work-related attitude that enables modern knowledge workers to operate productively in challenging work environments (Rich *et al.*, 2010).

Engagement at work refers to individuals’ involvement, commitment, passion, enthusiasm, focused effort, and energy (Macey and Schneider, 2008). However, the compendium of the types of engagement important for knowledge work remains rather poorly understood. While work engagement has been extensively studied, we argue that two less-examined engagement types — organization engagement (i.e., intellectual commitment to an organization) and social engagement (i.e., connecting with the work environment through shared values with colleagues) — are also crucial in current knowledge work, as expectations of employee proactivity are

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3 increasing (Maden, 2015).
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6 A large part of the variation in engagement at work is based on individual resources (e.g., Bakker
7 and Demerouti, 2008; Van Wingerden *et al.*, 2015; Xanthopoulou *et al.*, 2009a). Specifically,
8 psychological capital (PsyCap) as the positive and developmental state of an individual (Luthans
9 Youssef, 2004) is a key antecedent of engagement at work. **The positive impact of high levels of
10 PsyCap on engagement can further be enforced by resilient leadership (Singh *et al.*, in press).**
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18 While we know much about the positive connection between PsyCap and work engagement, we
19 are in the dark about the connection between PsyCap and other forms of engagement, even
20 though these should be highly relevant for understanding the individual basis of knowledge work
21 in current times. **In general, the benefits of work engagement are well understood in the context
22 of HR (Aybas and Acar, 2017). However, the benefits of supporting also organizational
23 engagement and social engagement through HR practices offer further possibilities for increasing
24 human capital productivity in organizations.**
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36 Theoretical contributions to this topic are also scarce (Kenney and Zysman, 2016; McKeown and
37 Pichault, 2020). Our article takes an important step further by examining the following research
38 question: *How does psychological capital relate to different forms of engagement in modern
39 knowledge work?*
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46 The issue of how exactly the various elements of PsyCap influence engagement is also being
47 debated on. **The possibility of influencing engagement through endorsing the malleable elements
48 of PsyCap through effective HR functions can lead to significant increases in productivity. The
49 discussion of this possibility has largely been ignored in current literature with only few
50 exceptions.** While the authoritative works of Luthans *et al.* (2007, 2010) and Luthans and
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3 Youssef (2004) argue that PsyCap should be examined as a whole, some recent contributions
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5 (Madrid *et al.* 2017; Malinowski and Lim, 2015; Yu *et al.*, 2019) have demonstrated that this
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7 might not always be the case. Therefore, the current paper also explores whether discerning the
8
9 impact that individual PsyCap elements have on engagement might have some value.

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12 Disentangling the individual effects of PsyCap dimensions will allow a deeper understanding of
13
14 their relative importance for various types of engagement, which could affect decisions about
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16 recruiting, team composition, and training, and **staff maintenance** (Agarwal and Gupta, 2018),
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18 **which are all crucial factors of successful HR processes in contemporary organizations.**

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22 In this paper, we argue that in order to understand and manage the individual basis of knowledge-
23
24 intensive work, we need to comprehend the full spectrum of engagement at work and disentangle
25
26 the individual impacts of PsyCap dimensions on work, organization, and social engagement.

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29 Overall, our paper provides important insights for contemporary organizations that are willing to
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31 look beyond managing their physical capital and to place a greater emphasis on managing their
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33 intangible assets, for HR professionals facing the task of leading such endeavors, and for
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35 knowledge workers needing to navigate the challenges in their current worklife. Our study
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37 contributes to the research literature in three ways. The positive connection between PsyCap and
38
39 work engagement has been established (e.g., Bakker *et al.*, 2008; Bakker *et al.*, 2011;
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41 Xanthopoulou *et al.*, 2007). In addition to work engagement, we first show that the connection
42
43 between PsyCap and organization and social engagement is also significant. We thus emphasize
44
45 that engagement is not just about positive involvement in work tasks but that situational factors
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47 around work tasks, which result in organization and social engagement, are also significant.

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50 Second, we simultaneously test the composite PsyCap scale and its dimensions of self-efficacy,
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52 resilience, hope, and optimism in a sample of knowledge workers to provide evidence that
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3 although PsyCap as a composite construct shows very good predictive power of engagement,
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5 there are differences in the relative power of some dimensions on work, organization, and social
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7 engagement. Third, we combine the latest research in the field of HR management and
8
9 organizational psychology to suggest that focusing on personal resources, such as PsyCap, cannot
10
11 be ignored as managerial policies and processes are being planned and implemented. **We argue**
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13 **that the link between HR functions and optimizing the use of human capital in organizations is**
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15 **especially relevant in the knowledge work context due to the high level of autonomy expected of**
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17 **such workers.**
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26 **Theoretical background and hypotheses**

27 ***Engagement in knowledge work: work, organization, and social engagement***

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30 Kahn (1990) originated interest in work-related engagement, and following Kahn, Rich *et al.*
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32 (2010) defined engagement at work as a “multi-dimensional motivational concept reflecting the
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34 simultaneous investment of an individual’s physical, cognitive, and emotional energy in active,
35
36 full work performance” (p. 619) and called it *job engagement*. In Europe, engagement was seen
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38 as the antipode of burnout (Schaufeli *et al.*, 2002). It was called *work engagement* and defined as
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40 “a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and
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42 absorption” (Schaufeli *et al.*, 2002, p. 74). As work engagement has been connected with
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44 successful work performance (Rich *et al.*, 2010), its experience is important for individuals and
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46 organizations alike.
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54 While the topic of work engagement has dominated discussions on engagement, several
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3 researchers have suggested that other forms of engagement might also be beneficial to
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5 organizations. Saks (2006) describes the difference between work engagement and *organization*
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7 *engagement* by defining the former as the amount of effort employees voluntarily put into their
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9 jobs and the latter as employees' intellectual commitment to their organization. Schaufeli (2013)
10
11 thinks that a wider discussion on the definitional differences between work engagement and
12
13 organization engagement is missing from the research community. Barrick *et al.* (2015) described
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15 engagement as an organization-level construct in their study that connects motivating work
16
17 designs and firm performance. This type of engagement makes humans interested in
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19 organizational well-being in addition to their own and thus willing to make efforts for common
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21 organizational benefits (Dutton *et al.*, 1994). We argue that organization engagement is highly
22
23 relevant for contemporary knowledge workers because psychological presence in and intellectual
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25 commitment to the organization can balance the strain caused by physical distancing in remote
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27 working and the mental distancing caused by highly autonomous work tasks assigned to
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29 knowledge workers.
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36 Soane *et al.* (2012) proposed *social engagement* as another significant form of engagement and
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38 argued that the ways in which employees interact with colleagues, peers, and other stakeholders
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40 will result in the experience of social engagement at work. They defined social engagement as
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42 “the extent to which one is socially connected with the working environment and shares common
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44 values with colleagues” (p. 532). Knowledge work tends to require extensive amounts of
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46 interaction and collaboration in order to create, apply, integrate, and share knowledge (Blomqvist
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48 *et al.*, 1995). Therefore, a key challenge facing modern knowledge workers relates to sustaining
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50 relationships (Ashford *et al.*, 2018) and building social capital (Nahapiet and Goshal, 1998).
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52 Social engagement arguably is a highly relevant facet of the overall engagement at work,
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3 especially for knowledge workers.
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6 In sum, we propose that in order to understand the full compendium of engagement at work for
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8 modern knowledge workers, we also need to acknowledge its two more recent and less-studied
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10 aspects—organization and social engagement.
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13 14 ***Psychological capital***

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17 PsyCap is a composite construct that describes an individual's positive psychological
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19 development. PsyCap is defined as "(1) having confidence (self-efficacy), to take on and put in
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21 the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism)
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23 about succeeding now and in the future; (3) persevering toward goals and, when necessary,
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25 redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and
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27 adversity, sustaining and bouncing back and even beyond (resilience) to attain success (Luthans
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29 *et al.*, 2007, p. 542). Evidence from scientific contributions (Luthans *et al.*, 2007) suggests that
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31 the elements of PsyCap are state like, meaning they are malleable and open to change and
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33 development.
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39 Self-efficacy as an element of PsyCap originates from Bandura's (1977) social cognitive theory,
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41 which claims that self-efficacy beliefs are needed to master goals and performance. Resilience is
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43 about positive coping and adaptation mechanisms for dealing with adversities. Empirical studies
44
45 have shown that one's level of resilience can increase after dealing with challenging events
46
47 (Luthans *et al.*, 2007). Hope consists of goal-directed energy and plans to meet these goals
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49 (Luthans *et al.*, 2007). It is about the will and ability to succeed (Snyder *et al.*, 1991). In a recent
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51 study, Ozyilmaz (2020) found that hope and human capital enhance work engagement. As an
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53 element of PsyCap, optimism is associated with a positive outlook on prospective outcomes and
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3 includes a realistic evaluation of what is possible to achieve in any given situation (Luthans *et al.*,
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5 2007). Optimism in the workplace has been found to be related to job satisfaction and work
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7 happiness (Luthans *et al.*, 2007).
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10 11 ***Research model*** 12

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14 To respond to the research gap identified in the introduction, we build a research model based on
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16 the most used model for explaining the antecedents and outcomes of work engagement: the job
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18 demands-resources model (Demerouti *et al.*, 2001). It was originally developed to describe the
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20 relationship between burnout and disengagement and was later modified (Bakker and Demerouti,
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22 2007; Llorens *et al.*, 2006) to include the positive aspects leading to work engagement, thus
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24 emphasizing the motivational aspect of job resources. Xanthopoulou *et al.* (2007) added personal
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26 resources alongside job resources as antecedents of work engagement. In its current state, the job
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28 demands-resources model is a heuristic model specifying how employee well-being can be
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30 produced by two sets of working conditions—those of job demands and job resources. The basic
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32 idea behind the model is that while job demands can lead to exhausting employees' physical and
33
34 mental resources, job resources are motivational and can lead to positive attitudes, behavior, and
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36 engagement. In this paper, we perceive the fundamental transformations of the modern worklife
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38 as demands that can be alleviated by the impact of personal resources, such as PsyCap.
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45 Because of the model's heuristic nature, Schaufeli and Taris (2014) recommended using the
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47 model together with other organizational theories. In our research model (Figure 1), we support
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49 the job demands-resources model by using a modern interpretation of conservation of resources
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51 (COR) theory (Hobfoll, 1989, 2011) to explain the underlying psychological processes involved
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53 in the development of engagement. The modern interpretation of COR theory argues that in
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3 challenging work circumstances, such as knowledge-intensive work, individuals continuously
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5 develop their personal resources (Hobfoll, 2011) to cope with work demands. Based on the idea
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7 of COR theory, when the demands of modern worklife increase, we suggest that individuals try
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9 to identify the personal resources they need the most in their current work situation and strive to
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11 develop such resources. This makes the role of PsyCap as a malleable tool especially prevalent
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13 for current-day knowledge workers.
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26 ***Relationship between PsyCap and engagement in knowledge-intensive work***

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29 It is a generally acknowledged fact that a happy worker is a productive worker, but this statement
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31 does not explain how one can become a happy worker or the kinds of resources needed at the
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33 individual, team, or organizational level to support this process (Nielsen *et al.*, 2017). Therefore,
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35 the focus of research needs to be directed to factors that help individuals reach their goals
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37 (Halbesleben *et al.*, 2014; Lupsa, Baciu, and Virga, 2020). Individuals with higher levels of
38
39 PsyCap are intrinsically motivated to pursue their goals, resulting in the experience of
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41 engagement at work and higher performance (Bakker *et al.*, 2011, 2008).
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46 The importance of PsyCap to the development of engagement at work has also been
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48 acknowledged, and it is now described as an important predictor of engagement at work along
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50 with job resources (Grover *et al.*, 2018). We therefore expect that PsyCap is also positively
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52 related to work engagement in the context of knowledge-intensive work. As we pointed out
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54 above, research regarding other forms of engagement, such as organization and social
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3 engagement, is lacking. Autonomous work tasks (Sewell and Taskin, 2015), project-based
4 organizations (Turner and Pennington, 2015), and temporary organizing (Spreitzer *et al.*, 2017)
5 challenge individual workers. We expect that mastering these circumstances through personal
6 resources, such as PsyCap, leads to intellectual commitment to and psychological presence in an
7 organization, manifesting itself as organization engagement. We further argue that positive
8 interaction with colleagues and peers, resulting in social engagement, develops through the
9 contagiousness of having a positive attitude towards succeeding, bouncing back from adversities,
10 and being willing to invest time and energy in developing alternative paths to success—all
11 qualities expressed through PsyCap. Based on the previously acknowledged positive connection
12 between PsyCap and work engagement and what we have argued above on the connection
13 between PsyCap and organization and social engagement in the current worklife, we hypothesize
14 the following:

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32 *H1a.* PsyCap is positively related to work engagement in knowledge-intensive work.

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35 *H1b.* PsyCap is positively related to organization engagement in knowledge-intensive work.

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42 *H1c.* PsyCap is positively related to social engagement in knowledge-intensive work.

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Relationship between PsyCap dimensions and engagement in knowledge-intensive work

Most studies addressing PsyCap have followed the findings of Luthans and colleagues (Luthans
et al., 2010, 2007) and examined it as a composite higher-order construct. However, some more
novel contributions have questioned this approach and suggested that individual PsyCap elements
may exert different impacts on work-related attitudes and performance. For example, Yu *et al.*
(2019) re-raised this issue and studied the relationship between PsyCap and employee creativity

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3 by using both the composite measure and each of its dimensions separately. They found that not
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5 all PsyCap dimensions are equally important in influencing creativity, and they argued that the
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7 authoritative findings by Luthans and colleagues may have prevented a thorough exploration of
8
9 the full power of the PsyCap construct in employee-relevant issues. Similarly, Madrid *et al.*
10
11 (2017) found that the dimensions of PsyCap exerted a unique impact on work behaviors.
12
13 Malinowski and Lim (2015) discovered that examining PsyCap dimensions in isolation enables a
14
15 more thorough examination of their relative role in building work engagement and well-being.
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17 Following this track of thought, we suggest that various dimensions of PsyCap could exert
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19 different impacts on different forms of engagement at work and argue that studying these in more
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21 detail is useful for bringing about a specific understanding of the individual bases of engagement
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23 at work.
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29 Self-efficacy is connected with an individual's skills, knowledge, and competencies (Scholz *et*
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31 *al.*, 2002). Self-efficacious people look for challenging tasks and are highly motivated to
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33 accomplish their goals successfully (Luthans and Youssef, 2004). Several researchers have been
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35 interested in the connection between self-efficacy and work engagement (e.g., Consiglio *et al.*,
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37 2016; Llorens *et al.*, 2007; Van Wingerden *et al.*, 2015), and they found that self-efficacy is
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39 positively related to work engagement. Because of the task- and activity-focused nature of work
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41 engagement, we expect that self-efficacy is more influential for work engagement than for
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43 organization and social engagement.
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49 Resilience is the developable capability to bounce back from adversities (Luthans, 2002). In
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51 earlier studies, resilience has been found to positively affect coping behaviors in problem solving
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53 (Sinclair and Wallston, 2004) and work performance (Luthans *et al.*, 2006). The autonomy and
54
55 self-determination expected in modern worklife demand resilience (Christensen, 2011). In a
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3 recent review, Hartmann *et al.* (2019) pointed out that resilience may be context specific and
4 emphasized the importance of understanding how employees deal with the adversities they face
5 every day in an increasingly dynamic working environment. Only a few recent studies have
6 indicated interest in the role of resilience as a predictor of work engagement (e.g., Mache *et al.*,
7 2014). As modern knowledge-intensive work is encumbered with challenging requirements and
8 situations, we assume that resilience is equally important in all forms of engagement at work.
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18 Hope is a motivational state that incorporates aspirations and expectations. It is agentic and
19 active, as well as process oriented (Pleeging *et al.*, 2021). Individuals high with hope can find
20 multiple pathways to achieve their goals and adapt their plans, as needed (Sweetman and
21 Luthans, 2010). In engagement research, a lack of hope is associated with burnout, thus making
22 hope a positive contributor to work engagement (Sweetman and Luthans, 2010). Because of the
23 agentic role of hope, we expect that it is equally important for all forms of engagement at work.
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33 The difference between hope and optimism is that hope also involves a pragmatic execution of a
34 desired goal, whereas optimism portrays a vision and expectation of positive outcomes more
35 generally (Sweetman and Luthans, 2010). Optimists can cope better with threatening situations
36 and adapt better to challenging work situations (Xanthopoulou *et al.*, 2009a). As optimism is
37 related to organizational citizenship behavior (Bogler and Somech, 2019), it may be more
38 relevant for organization engagement than other PsyCap dimensions are. Optimistic individuals
39 tend to have high expectations about their abilities to form inter-social connections and be in
40 mutually fruitful collaboration with others (Luthans *et al.*, 2010), so we assume that optimism
41 may also be especially influential for social engagement.
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Yu *et al.* (2019) proposed that the strong role of PsyCap as a higher-order construct showing

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3 convergent and discriminant validity has prevented researchers from fully exploring whether and
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5 how its individual components might facilitate employee-specific behavior. Saks and Gruman
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7 (2014) argued that many forms of engagement could activate the physical, emotional, and
8
9 cognitive aspects of positive work behavior, and they pointed out that an individual could
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11 experience one form of engagement while being disengaged in other respects. We therefore
12
13 believe that there are differences in the strength and significance of the relationships between
14
15 different dimensions of PsyCap and different forms of engagement at work. We hypothesize the
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17 following:
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22 *H2a.* The dimensions of PsyCap exert different impacts on work engagement in knowledge-
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24 intensive work.
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28 *H2b.* The dimensions of PsyCap exert different impacts on organization engagement in
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30 knowledge-intensive work.
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34 *H2c.* The dimensions of PsyCap exert different impacts on social engagement in knowledge-
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36 intensive work.
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39 40 41 42 43 **Methodology**

44 45 46 *Sample and procedure*

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49 The data were collected from September 2017 to March 2018 through online questionnaires sent
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51 to experts working in three different types of knowledge work settings. The first set of data,
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53 obtained from 289 respondents, was collected from the members of a Finnish academic trade
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55 union representing mainly academic engineers and architects who had a steady work relationship
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3 with an organization. The online questionnaire was sent to 3,000 arbitrarily chosen union
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5 members via a link in the trade union's newsletter in September 2017. The second set of data,
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7 obtained from 219 respondents, was collected from a digital platform in which, based on the idea
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9 of co-creation, complex problem-solving tasks are assigned to temporary part-time project teams.
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11 The online questionnaire was sent to all experts who listed themselves on the community website
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13 as willing to participate in the temporary project work. The third set of data, obtained from 147
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15 respondents, was collected from a digital platform that offers autonomous expert services in
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17 translation and proofreading. Clients can submit small or large task requests online, and platform
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19 facilitators assign suitable freelancers from their community; freelancers can also volunteer for
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21 certain commissions. The online questionnaire was sent to all freelancers who have been offered
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23 a commission through the platform since its establishment in 2012 and who are still active
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25 members of the community. The data included missing values because of incomplete responses.
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27 These missing values were treated in listwise order, thus leaving an effective sample of $N = 396$
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29 for further analysis.
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37 *Measures*

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39 The central concepts of PsyCap and work-related engagement were measured using previously
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41 validated instruments. As all the items included were in the form of a statement, the respondents
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43 were asked to rank their disagreement or agreement on a seven-point Likert scale ranging from
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45 1= completely disagree to 7 = completely agree.
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50 *PsyCap and its dimensions*

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53 To measure PsyCap and its dimensions, we used Luthans *et al.*'s (2007) scale for measuring hope
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55 (four items) and optimism (four items). We opted to use Chen *et al.*'s (2001) general self-efficacy
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3 scale (eight items) because it refers to confidence in dealing with demands across a wide variety
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5 of situations, as well as Sinclair and Wallston's (2004) Brief Resilient Coping Scale (four items)
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7 because of its positive behavioral focus.
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10 11 *Engagement at work*

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14 Work engagement was measured with the shortened version of the Utrecht Work Engagement
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16 Scale, UWES-9 (Schaufeli *et al.*, 2006). To measure organization engagement, we used Saks'
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18 (2006) Organization Engagement Scale (six items). We used three items to measure social
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20 engagement from Soane *et al.*'s (2012) Intellectual, Social, Affective Engagement Scale.
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23 24 25 *Measurement model*

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27 The measurement model was analyzed with confirmatory factor analysis (CFA) using LISREL
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29 (version 8.80) to verify the latent factor structure of the central concepts. The final results of the
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31 maximum likelihood estimation are presented in Table I for the measurement model analysis
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33 with CFA. The model fit was at a reasonable level ($\chi^2 = 199.24$ with degrees of freedom = 131,
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35 root mean square error of approximation = .034, normed fit index = .985, non-normed fit index =
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37 .993, goodness of fit index = .950, adjusted goodness of fit index = .928; see Hair *et al.*, 1998).
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41 The reliability of the latent constructs was assessed with the composite reliability coefficient and
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43 average variance extracted, which were both computed based on factor loadings and error
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45 variances (Diamantopoulos and Siguaaw, 2000).
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49 The organization and social engagement constructs both included the original items, producing a
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51 high level of reliability and average variance extracted. The scale for self-efficacy shrank to three
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53 items because of highly correlated errors. Similarly, for resilience, one item had to be dropped
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55 based on a highly correlated error. The remaining items had high loadings and an adequate level
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3 of reliability. The constructs of hope and optimism both eventually had two reflective items; one
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5 item from each scale was removed because of low loadings. The remaining solution meets
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7 reliability requirements. The work engagement scale was composed of the summated scales of
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9 the separate dimensions of vigor, dedication, and absorption. The dimensions were separately
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11 verified with CFA. Each dimension included three items that were adopted from the UWES-9
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13 measurement scale (Schaufeli *et al.*, 2006).
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27 **Results**

28 *Descriptive statistics and correlations*

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33 The descriptive statistics of the respondents are presented in Table II. The share of males is
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35 relatively higher than the share of females. Age is quite normally distributed. The education level
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37 was mainly master or its equivalent, which was expected in knowledge-intensive work.
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49 *Regression analysis*

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52 The procedure for the main analyses included three sets of estimations using linear regression for
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54 each of the dependent variables (work, organization, and social engagement). For each dependent
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3 variable, two steps of independent variables were entered: (Model 1) PsyCap as a single indicator
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5 corresponding to Hypothesis 1(a, b, c) and (Model 2) PsyCap broken down into self-efficacy,
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7 resilience, hope, and optimism corresponding to Hypothesis 2(a, b, c). The regression results in
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9 terms of standardized regression coefficients (with significance levels) and tolerance values are
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11 presented in Table III. The R squared for both models can be found from the same table together
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13 with the model comparisons, when appropriate.
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18 The first model illustrated that PsyCap as a summated scale was able to explain 34.5% of the
19
20 variation in work engagement. PsyCap is positively (and strongly) related to work engagement,
21
22 supporting Hypothesis H1a. The first model also suggests that PsyCap is a significant
23
24 explanatory variable for organization engagement. Although PsyCap only explains less than 10%
25
26 of the variation in organization engagement, Hypothesis H1b can be accepted. Finally, PsyCap by
27
28 itself had a strong effect on social engagement, and it explained 18.9% of the variance (Model 1
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30 in Table III); this result provides support for Hypothesis H1c.
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35 The analysis of the second model was expected to capture the influence of different dimensions
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37 of PsyCap on work, organization and social engagement. With work engagement, the share of
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39 variance explained was slightly higher than that with the single-item model. It therefore seems
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41 that self-efficacy, hope, and optimism are significant predictors of work engagement, partially
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43 supporting Hypothesis H2a, but their unique contribution is quite low (see Table III for the
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45 squared semi-partial correlations, sr^2). If the separate squared semi-partial correlations are
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47 summarized, the unique share of variance explained is only 5.7%. This indicates that the
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49 explanatory power in the model is mainly composed of a joint influence of the four dimensions.
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3 Breaking PsyCap down into its dimensions naturally increases the R squared (Model 2) with
4 organization engagement, partially supporting Hypothesis H2b. The most influential explanatory
5 elements were resilience and self-efficacy. An examination of the squared semi-partial
6 correlations suggests that most of the variation is also explained as a joint influence on the
7 dimension (6.5% of the total variation).
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15 The final part of the regression analyses focuses on social engagement. However, this time, the
16 breaking of the PsyCap into its dimensions did not increase the share of variance explained.
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18 Hypothesis H2c is partially supported, as optimism is the most significant explanatory variable;
19 self-efficacy and resilience are also moderately significant. The squared semi-partial correlations
20 indicate that most of the variance explained is a joint influence of the dimensions.
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38 Discussion

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40 In previous research, it has been established that PsyCap leads to desirable work-related
41 outcomes (Sweetman and Luthans, 2010; Van Wingerden *et al.*, 2015; Xanthopoulou *et al.*,
42 2009b) and that work engagement is one of the key drivers of successful work performance (Rich
43 *et al.*, 2010). However, relatively few studies have addressed engagement at work in the context
44 of knowledge-intensive work. This lack of empirical research has been acknowledged by O'Neill
45 *et al.* (2014) and Gilson *et al.* (2015). In addition, research focusing on different forms of
46 engagement at work and how they could be beneficial for HR management practices is rare, and
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3 our study addressed these gaps.
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7 ***Implications for theory***
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10 Theoretically, we widen the focus of the discussion on PsyCap from organizational behavior to
11 human resource management by emphasizing the role of PsyCap as a malleable resource to be
12 benefited from both by individual workers themselves, as well as HR personnel, as a potential
13 tool for performance improvement especially in the knowledge work context. PsyCap offers a
14 highly relevant, yet until now relatively little utilized viewpoint for improving HR functions
15 through benefiting from individual strengths.
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24 PsyCap has been found to be a crucial element for work-related well-being (Lupsa *et al.*, 2020;
25 Luthans *et al.*, 2007). This positive relationship has been confirmed in several studies (e.g.,
26 Bakker and Xanthopoulou, 2013; Grover *et al.*, 2018). To test the relationship between PsyCap
27 and engagement at work, we used the job demands-resources model (Demerouti *et al.*, 2001) to
28 build our first set of hypotheses. Earlier research findings were corroborated, as our analysis
29 results supported the hypothesis about the positive connection between PsyCap and work
30 engagement. In addition, PsyCap was positively related to organization and social engagement in
31 knowledge-intensive work, thus giving support to all three hypotheses in the first set. However, it
32 seems that the work engagement construct itself has the strongest relationship with PsyCap in the
33 context of knowledge-intensive work, as PsyCap explains more of the variation in work
34 engagement than in organization and social engagement.
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50 Luthans *et al.* (2007) argued that operationalizing PsyCap as a latent factor with the four
51 indicators of self-efficacy, resilience, hope, and optimism allows the examination of more
52 impactful motivational processes that lead to engaged work performance. While we do not
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3 disagree with this statement, we felt it was of interest to study each of the dimensions of PsyCap
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5 separately in connection with different forms of engagement at work to reveal whether one or
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7 more of the dimensions rise above the rest as determinants for work, organization, or social
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9 engagement. Some studies tested PsyCap as a composite measure and each of the dimensions
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11 separately (Madrid *et al.*, 2017; Malinowski and Lim, 2015; Yu *et al.*, 2019), but none looked at
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13 the effect of PsyCap in connection with different forms of engagement at work.
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18 Our results indicated that self-efficacy by itself is positively connected only with work
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20 engagement and that resilience is positively connected only with organization engagement. This
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22 implies that different forms of engagement at work require stronger expressions of one or more
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24 dimensions of PsyCap. We also found that optimism was positively connected with all three
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26 forms of engagement at work, thus implying that the role of optimism might be stronger as a
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28 determinant for engagement at work than the role of the other dimensions are. Our second set of
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30 hypotheses was therefore partially supported.
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35 Our findings are important for three reasons. First, theoretically, our study contributes to the
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37 literature on engagement at work by arguing that the task- and activity-focused work engagement
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39 construct alone does not sufficiently describe the circumstances that lead to the development of
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41 engagement at work. We claim that intellectual commitment to and psychological presence in the
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43 organization as a community (organization engagement), together with social connection with
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45 peers and colleagues through shared values (social engagement), are also significant factors that
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47 express engagement at work. Hence our paper extends the literature on engagement by
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49 emphasizing that also other significant forms of engagement at work should be considered as
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51 factors leading to increased performance in addition to the more task-specific concept of work
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53 engagement.
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3 Second, our study not only provides empirical evidence of the strength of PsyCap as a higher-
4 order construct, but it also recognizes that some elements of PsyCap are more influential than
5 others in the development of different forms of engagement at work. Third, our study combines
6 research in the fields of HR management and organizational psychology by studying engagement
7 at work in the context of knowledge-intensive work and recommends placing more emphasis also
8 on managing the softer side of HR issues, such as organizational human capital. We argue that
9 understanding the importance of personal resources, such as PsyCap, will have a significant
10 effect on individual well-being and performance in organizations.
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23 *Implications for practitioners*

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25 We suggest that HR personnel pay closer attention to PsyCap as a phenomenon and acknowledge
26 that PsyCap may be a potential tool for increasing performance through focusing and enforcing
27 the personal characteristics of individual workers, such as the elements of PsyCap. Previously,
28 PsyCap training has been suggested by Choi (2020) as a way of enhancing self-directed
29 employee behavior, and Ghosh et al. (2018) show that frequent mentoring leads to increased
30 psychological capital and engagement. These findings indicate that such HR functions offer
31 significant possibilities for performance improvement especially in the knowledge work context
32 by benefiting from PsyCap as a driver for engagement at work. We also emphasize that focusing
33 solely on the task-oriented work engagement concept does not cover all the forms that
34 engagement at work consists of. At least organization engagement and social engagement have
35 been shown to have relevance in modern worklife, especially with knowledge workers due the
36 autonomous and asynchronous character of their way of working.
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54 Managerially, our study is important for HR management in organizations, as our analyses reveal
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3 that PsyCap affects all three types of engagement at work, but the strength of the dimensions of
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5 PsyCap is not the same for different forms of engagement at work. These findings should be
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7 considered, as organizations are preparing themselves for the current trend of increasing hybrid
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9 work arrangements and getting ready to battle for the most skilled workforce.
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13 Ruostela *et al.* (2015) pointed out that knowledge-intensive organizations should not be
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15 developed solely through management models and systems but with increased attention to novel
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17 managerial policies and practices. Our results show a strong relationship between PsyCap and
18
19 engagement at work among knowledge workers. Recent studies (Bakker, 2017; Nielsen *et al.*,
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21 2017) have emphasized focusing on sufficient resources to ensure employee well-being and
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23 performance and acting toward reducing turnover intentions (Agarwal and Gupta, 2018). Both
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25 PsyCap and different forms of engagement at work are developable state-like constructs
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27 (Sweetman and Luthans, 2010) with positive spiral effects (Bakker and Demerouti, 2008),
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29 indicating their potential for improved organizational performance through investments on the
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31 softer side of managerial practices, such as coaching and mentoring, as means for increasing the
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33 desired PsyCap dimensions.
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40 ***Limitations and directions for future research***

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42 As our study investigates a relatively new area of research, it has some limitations. Personality-
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44 related phenomena, such as PsyCap and engagement at work, can only be measured using self-
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46 assessment scales. **In this paper, we have looked at three different forms of engagement at work.**
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48 **However, some other forms of engagement at work have also been identified in academic**
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50 **literature (e.g., team engagement; see Costa *et al.*, 2014), though not as often discussed.**
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52 **Including these other forms of engagement at work to the research design might offer new**
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3 insights to the role of PsyCap as a positive driver of positive work-related behavior.
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6 Another limitation of this study is its cross-sectional nature. We trust that the novelty of the topic
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8 of different forms of engagement at work will encourage future research to build longitudinal
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10 research designs for confirming causality between our constructs. Furthermore, PsyCap and its
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12 elements are not the only factors behind different forms of engagement at work, and future
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14 studies should consider both testing other factors that are important for developing engagement at
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16 work and doing so in other work contexts for a wider understanding of the power of PsyCap and
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18 its dimensions on worker well-being and performance in contemporary work society.
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24 **Conclusion**

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26 Luthans and Sweetman (2010) emphasized that a key component in developing engagement at
27
28 work is focusing on the development of PsyCap. Given the importance of PsyCap in developing
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30 engagement at work, it is recommended that HR management personnel consider looking at
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32 PsyCap and its elements during recruitment processes and in relation to designing all work
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34 arrangements, especially knowledge-intensive ones.
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Table I Results of the confirmatory factor analysis

<i>Construct and items</i>	<i>Std. loading</i>	<i>Average</i>	<i>Std. deviation</i>
Work engagement† (CR = .926, AVE = .808)			
Vigor	.895	4.97	1.23
Dedication	.954	5.47	1.26
Absorption	.844	5.12	1.19
Organization engagement (CR = .896, AVE = .743)			
Being a member of my work organization is very captivating.	.881	4.68	1.55
One of the most exciting things for me is getting involved with things happening in my work organization.	.905	4.20	1.61
I am highly engaged in my work organization.	.797	4.07	1.70
Social engagement (CR = .940, AVE = .839)			
I share the same work values as my colleagues.	.919	5.13	1.38
I share the same work goals as my colleagues.	.939	5.09	1.36
I share the same work attitudes as my colleagues.	.889	4.98	1.40
Self-efficacy (CR = .885, AVE = .720)			
When facing difficult tasks, I am certain that I will accomplish them.	.822	5.38	1.14
I am confident that I can perform effectively in many different tasks.	.872	5.76	1.05
Even when things are tough, I can perform quite well.	.852	5.66	1.07
Resilience (CR = .814, AVE = .596)			
I actively look for ways to replace the losses I encounter in life.	.716	4.88	1.37
I believe that I can grow in positive ways by dealing with difficult situations.	.733	5.67	1.13
I look for creative ways to alter difficult situations.	.858	5.36	1.25
Hope (CR = .715, AVE = .560)			
If I find myself in a difficult situation, I can think of ways to get out of it.	.659	5.42	1.05
I can think of many ways to reach my current work goals.	.828	5.37	1.17
Optimism (CR = .874, AVE = .777)			
I always look on the bright side of things regarding my job.	.905	5.05	1.30
I am always optimistic about my future.	.857	5.18	1.34
† Work engagement dimensions were separately verified from the original UWES9 scale; the items are shown in Appendix 1.			
CR = measurement scale composite reliability, acceptable level > .700			
AVE = measurement scale average variance extracted, acceptable level > .500			

Table II Distribution of descriptive information

Gender		Age	
	N (%)		N (%)
Male	257 (64.9%)	Under 25	2 (0.5%)
Female	139 (35.1%)	25–34	89 (22.5%)
		35–44	119 (30.1%)
		45–54	96 (24.2%)
Education			
	N (%)		N (%)
Bachelor or its equivalent	57 (14.4%)	55–64	83 (21.0%)
Master or its equivalent	278 (70.2%)	Over 64	7 (1.8%)
Other education	61 (15.4%)		

Personnel Review

Table III Regression results for work, organization and social engagement

Work engagement						
Model	Independent variables	std β		Tolerance	r^2	sr^2
Model 1	PsyCap	.587 ***		1.000	.345	
Model 2	Self-efficacy	.245 ***		.473	.350	.028
	Resilience	.096		.457		.004
	Hope	.157 **		.348		.009
	Optimism	.187 ***		.442		.016
Organization engagement						
Model	Independent variables	std β		Tolerance	r^2	sr^2
Model 1	PsyCap	.298 ***		1.000	.089	
Model 2	Self-efficacy	.156 ***		.473	.101	.011
	Resilience	.158 ***		.457		.011
	Hope	-.104		.348		.004
	Optimism	.145 **		.442		.009
Social engagement						
Model	Independent variables	std β		Tolerance	r^2	sr^2
Model 1	PsyCap	.435 ***		1.000	.189	
Model 2	Self-efficacy	.123 *		.473	.189	.007
	Resilience	.132 *		.457		.005
	Hope	.079		.348		.002
	Optimism	.172 **		.442		.014
* $p < .010$						
** $p < .050$						
*** $p < .005$						

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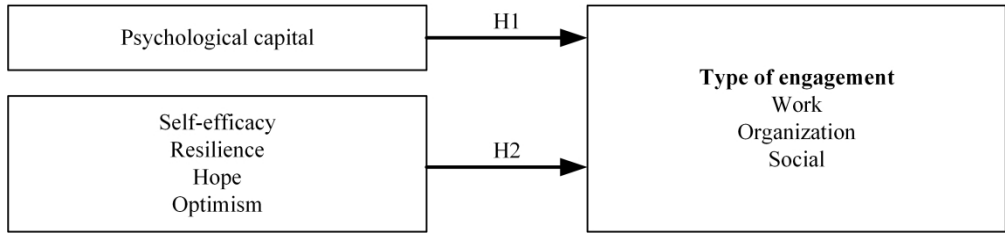


Figure 1 Research model
155x35mm (600 x 600 DPI)