The effects of a strengths-based intervention on Psychological Capital, Organizational Citizenship Behaviour and Innovativeness

Project Theme: Strengths-based intervention
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Abstract
This research explores the effect of strengths interventions on the level of OCB and innovativeness. Hypothesized was that the strengths intervention leads to higher levels of PsyCap and in turn to higher levels of OCB and innovativeness. To test these hypotheses, a quasi-experimental research was conducted with a sample of 70 employees ranging from the age of 21 to 34 who work in a construction firm. This sample consist of 31 persons who participated in a short strengths intervention and thus belong to the experimental group, the rest was part of the wait-list control group. This short strengths intervention is based on identification, development, use and appreciation of an employee’s strengths. All participants in this research filled in a pre-intervention, post-intervention, and one month follow-up questionnaire. In addition, the direct colleagues of the participants filled in a pre-intervention and post-intervention questionnaire. Results of this research demonstrated that participating in a strengths intervention did not lead to higher levels of PsyCap, which in turn, did not lead to higher OCB and innovativeness. Besides that, the findings showed that there was no direct relationship between the strengths intervention and self-rated OCB and self- and peer-rated innovativeness. In contrast, there is was a direct relationship found between the strengths intervention and peer-rated OCB.
Introduction

The ‘Global Workforce Study’ by Towers Watson (2012) showed that only 35% of employees would walk the extra mile to help their organization to succeed. Not a high number, assuming that organizations benefit from employees who show behaviours that are not considered as a part of the formal job but support effective functioning of the organization. This behaviour is known as ‘organizational citizenship behaviour’ (OCB) and multiple studies and meta-analysis indicate that it is an important predictor of organizational performance and success (Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff, Whiting, Podsakoff, & Blume, 2009; Nielsen, Hrvnak, & Shaw, 2009). OCB is a well-known form of extra-role performance that involves activities that benefit the organization but are not explicitly required and discretionary in nature (Chen, Eisenberger, Johnson, Sucharski, & Aselage, 2009). Another form of extra-role performance, beneficial to the organization, is employees’ innovative behaviour. Organizations benefit from innovative employees because they are essential for considerable continuous innovation improvements (de Jong & den Hartog, 2010) and sustainment of their competitive advantage (Kanter, 1988). Thus, employees’ innovativeness is about the production, adaption and implementation of useful and creative ideas within the organization (Kanter, 1988).

When aiming to promote employees’ OCB and innovativeness, studies based on positive psychology – characterized as a research stream focused on what makes life worth living (Seligmann & Csikszentmihalyi, 2000) – showed that developing the level of psychological capital (PsyCap) is an effective way to increase OCB (Norman, Avey, Nimnicht, & Graber Pigeon, 2010) and innovativeness (Abbas & Raja, 2011). Individuals with positive PsyCap will broaden and build up their personal resources, enabling them to show behaviour that is not determined by their job description. PsyCap is described as ‘one’s positive appraisal of circumstance and probability for success based on motivated effort and perseverance’ (Luthans, Avolio, Avey & Norman, 2007, p. 60). Thereby, PsyCap can be seen as a second-order factor composed of shared variance between the four components of self-efficacy, optimism, hope and resilience (Avey, Reichard, Luthans, & Mhatre, 2011).

Presumably, a strengths intervention based on identification, development, use and appreciation of an employee’s strengths can be used to increase the level of PsyCap and subsequently the level of OCB and innovativeness. Individual strengths have been defined as:
‘characteristics of a person that allow them to perform well or at their personal best’ (Wood, Linley, Maltby, Kashdan, & Hurling, 2011, p. 15). It is likely that using strengths increases PsyCap because people who experience positivity build up their psychological resources. This growth of psychological resources broadens their attention and focus, their patterns of thinking, and their behaviour (Fredrickson, 1998, 2001), resulting in more extra-role performance such as OCB and innovativeness.

In this research, a quasi-experimental design is executed in an organization to test these relationships. To the best of my knowledge, there are currently no studies that investigate the effect of a strengths intervention on PsyCap and in turn on OCB and innovativeness. Quinlan, Swain, and Vella-Brodrick (2011) conducted a review study about the effect of strengths intervention and proposed that better understanding of the mechanism through which these interventions work will help in designing more effective interventions. Therefore, this research will explore PsyCap as a possible mechanism through which strengths intervention affects the level of OCB and innovativeness. In addition, this research will provide organizations with insight into the effect of a strengths intervention. The strengths interventions are a brief and, in all likelihood, a cost-effective way to increase employees’ extra-role performance. So, it would be of great interest for organizations to know what the possible positive results of a strengths intervention are before they invest in it.

The aim of this research is to examine the relationship between a strengths intervention, OCB, and innovativeness mediated by PsyCap. Therefore, the following research question is formulated:

To what extent does a strengths-based intervention lead to an increased level of employees’ positive psychological capital (PsyCap) and organizational citizenship behaviour (OCB) and innovativeness?

Theoretical Framework

Individual strengths and strengths interventions

An individual’s strengths can be described as ‘a combination of talents (naturally recurring patterns of thoughts, feeling and behaviour), knowledge (facts and lessons learned), and skills (the steps of an activity)’ (Buckingham & Clifton, 2001, p 29). Focussing on an
individual’s strengths is part of the positive psychology movement, which aims to focus on what is right with people instead of what is wrong with them. In this movement, more value is given to strengths (instead of weaknesses), the extent of resilience (instead of vulnerability), and to enhancing and developing wellness to create a good life (instead of remediation of pathology) (Luthans, 2002).

Individuals possess genetic strengths that make them naturally good at some types of activities (Biswas-Diener, Kashdan, & Minhas, 2011). Theory proposes that using strengths is intrinsically motivating, engaging, satisfying, enjoyable, energizing, and favourable for the health of an individual (Linley & Harrington, 2006; Peterson & Park, 2006; Peterson & Seligman, 2004). Previous studies also empirically proved the positive effects of employing strengths, such as enhanced well-being (Govinji & Linley, 2007; Quinlan, et al, 2011), self-efficacy (Govinji & Linley, 2007) and engagement in activities (Harzer & Ruch, 2012).

Despite the benefits of using one’s strengths, only one-third of all individuals are capable of identifying their own strengths (Hill, 2001). In addition, many people note that they do not use their strengths very often at work (Buckingham, 2007). To stimulate people to make more use of their strengths, organizations can implement a strengths intervention. A strengths intervention can be defined as: ‘a process designed to identify and develop strengths in an individual or group. Interventions encourage the individual to develop and use their strengths, whatever they may be.’ (Quinlan et al., 2011, p. 1147). The definition includes three components. The first component, strengths identification, generally results in a small list of most important strengths. In this research, this list is obtained through feedback from third parties using an exercise called ‘reflected best self-portrait’ (Roberts, Dutton, Spreitzer, Heaphy, & Quinn, 2005). The second component is strengths development, in which individuals are motivated to cultivate and refine their strengths (van Woerkom & Meyers, 2014). According to Biswas-Diener et al. (2011), it is important that individuals learn how they can use their strengths in a wise way, depending on situational factors. The third component is use of strengths, in which individuals are stimulated to specify how, how often, when, and in which situation they plan to use their strengths by making a concrete action plan (van Woerkom & Meyers, 2014). In this way individuals are encouraged to use their most outstanding strengths more or in new ways (Seligman, Steen, Park, & Peterson, 2005).

Strengths intervention combines two approaches toward the strengths of an individual.
First, the ‘identify and use’ approach that views strengths more as a constant trait, in line with classic personality psychology. Second, the ‘strengths development’ approach that views strengths as personal capacities that can grow when individuals try to apply the strengths in the most effective way (Biswas-Diener, et al., 2011).

*Development of Psychological Capital through a strengths intervention*

In recent years, organizations, stimulated by the positive psychology movement, are triggered to go beyond employees’ human capital (known as education, experience, and implicit knowledge) and focus more on their psychological capital (Luthans & Youssef, 2004). It is worthwhile for organizations to focus on PsyCap because recognizing and developing positivity more directly can impact the performance of individuals (Luthans & Youssef, 2004). PsyCap has emerged from research on ‘positive organizational behaviour’ (POB) that is part of positive psychology (Seligman & Csikszentmihalyi, 2000). POB has been defined as: ‘the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace’ (Luthans, 2002a, p.59). The construct of PsyCap, consisting of self-efficacy, optimism, hope and, resilience, is regarded as a key construct of POB (Norman, et al., 2010).

Psychological capital (PsyCap) has been defined as ‘an individual’s positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goal (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success’ (Luthans et al., 2007, p.3). There is not only theoretical (Luthans, Youssef & Avolio, 2007) but also empirical (Luthans, et al., 2007) support that PsyCap is a second-order core construct, which means that PsyCap as a whole is accountable for more variance in important work outcomes than each of its components alone (Luthans, Youssef, & Rawski, 2011). In the social sciences, second-order constructs are quite useful because researchers often split very similar constructs (e.g. optimism & hope) while the differences between them are not necessarily meaningful (Hobfoll, 2002). The construct of PsyCap is state-like in contrast to trait-like constructs like Big Five personality dimensions
(Luthans et al., 2007). That means that openness to change and development is a fundamental feature of PsyCap (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011).

Building on that, it has been argued that PsyCap can be increased through meaningful interventions (Luthans, Avey, Avolio, & Peterson, 2010). In particular, the ability to develop PsyCap by a strengths intervention can be explained by previous studies and theory.

According to Bandura’s (2000) human agency theory, people’s belief in their self-efficacy can be developed through enactive mastery skills, where success is achieved by learning from mistakes. When participants identify and thereafter use their strengths in their work they will experience a mastery experience.

Luthans et al. (2010) pointed out that increasing positive expectancy could develop optimism. In strengths interventions, participants are stimulated to think about their successes in the past and through this they will expect more positive outcomes in the future as well.

Snyder (2000) proposed that hope is developable by improving people’s processes of goal setting so they are able to overcome obstacles by anticipating them and making new plans. In strengths interventions participants will improve their goal setting and anticipatory abilities by working on their future action plan outlining how they will use their strengths more to become better and overcome obstacles.

Masten (2001) found that resilience could be developed, managed and accelerated by strategies based on improving resources (e.g., becoming more employable). In strengths interventions, participants can improve their resources by cultivating and redefining their own strengths. In this way, participants are more aware of their own strengths and have the ability to use their strengths more frequently in their work and especially in difficult situations.

Past empirical studies provide evidence that PsyCap can be developed by an intervention with a positive focus. For example, Luthans, Avey, Avolio, Norman, & Combs (2006) found that PsyCap could be developed by psychological capital intervention (PCI). This intervention is different, yet comparable to the strengths intervention that is used in this quasi-experimental research because they are both based on positive psychology. Thus, participants in both interventions start by identifying their personal strengths that will be used across the interventions. The interventions have approximately the same timeframe: the PCI intervention takes 1-3 hours (depending on amount of participants and exercises used) and the strengths intervention takes three hours.
Similarly, Luthans, Avey, and Patera (2008) found that PsyCap could be developed through a highly focused 2-hour web-based training intervention. This web-based intervention differs from the face-to-face intervention that is used in this research. However, the interventions can be compared because they have the same content. In both interventions the participants are challenged to reflect on themselves and think of possible actions they can undertake in difficult situations. In addition, both interventions emphasize the importance of personal values and strengths.

More research is required to build stronger empirical evidence to support the theory that PsyCap is also developable through a strengths intervention. Based on the theoretical and empirical arguments presented above the following hypothesis is formulated:

**Hypothesis 1**: Participating in a strength-based intervention leads to an increase in the level of positive psychological capital (compared to a waitlist-control group).

**Effect of Psychological Capital on employees’ OCB**

PsyCap is expected to be a common underlying capacity essential to human motivation, cognitive processing, striving for success, and subsequent performance on the workfloor (Luthans, Avolio, Walumbwa, & Zhang, 2011). Previous research demonstrated that PsyCap is an important predictor of performance (Luthans, et al., 2007; Walumbwa, Peterson, Avolio, & Hartnell, 2011; Luthans & Jensen 2005). Earlier research made a distinction between in- and extra-role performance, where in-role performance concerns work behaviours that are part of the formal job description and, in contrast, extra-role performance concerns work behaviours that are beyond formal jobs (Hui, Lay, & Chen, 1999). OCB is a form of extra-role performance and is defined as: ‘individual behaviour that is discretionary, not directly or explicitly recognized by formal reward system and that in the aggregate promotes the effective functioning of the organization’ (Organ, 1988, p.4. as cited in Organ, 1997). Later, Organ rephrased the definition to: ‘Contributions to the maintenance and enhancement of the social and psychological context that supports task performance’ (Organ, 1997, p.91). Both definitions cover the idea that OCB is aimed at benefitting the organizations in which the individual works.
Based on the definition of OCB, suggesting that individuals show OCB when they are positively oriented towards themself and the organization, it is plausible that positive PsyCap leads to OCB. There are three theoretical reasons that could explain the relationship between PsyCap and OCB.

First, it is expected that the four components of PsyCap (hope, optimism, resilience, & self-efficacy) together have a synergistic effect and thus lead to more beneficial outcomes than the four solely (Luthans et al., 2007). The more valuable composite variable PsyCap is related to desirable work behaviours that support the organization through behaviour that is not part of the formal job (Norman et al., 2010). When necessary, individuals with positive PsyCap are more resilient and hopeful to persevere and reach their goals. Thus, they redirect paths to the goal in order to succeed. By finding a new path, individuals are likely to show behaviour that is not determined in the job description. In addition, they have a positive orientation by being more optimistic about succeeding in the future. Because they are confident about their own capabilities they will try new behaviours that are not formally part of the job.

Secondly, the construct of PsyCap (hope, optimism, resilience, & self-efficacy) has been mentioned as one of the core motivating forces in the academic domain. Research of Avey et al. (2011) confirmed that PsyCap as motivational propensity lead to desirable employee outcomes. Moreover, Stajkovic (2003) used the four states of PsyCap in his core confidence factor for work motivation. Individuals with a high amount of work motivation will do more than that is formally part of the job, and will show more OCB. So, it is expected that individuals with high levels of PsyCap will show more OCB.

Finally, Fredrickson’s (1998, 2001) broaden-and-build theory proposes that positive emotions and orientations broaden the attention and focus, the patterns of thinking, and the behaviour of people. A way in which an individual shows broader behaviours is OCB (Norman, et al., 2010). Based on the definition, positive emotions in the broaden-and-build theory can be compared with PsyCap. PsyCap is seen as a positive appraisal of the situation and the chance for success, and so equates to positive emotions. Thus, individuals with positive PsyCap related to positive emotions will presumably show more unasked behaviour such as generating suggestions to improve the organization, helping colleagues, or performing additional tasks. A study by Norman, et al (2010) also demonstrated that employees’ PsyCap
had positive impacts on OCB, based on this broaden-and-build theory of Fredrickson’s (1998, 2001). In addition, Isen and Baron (1991) stated that individuals with a positive mood are more likely to help others comparing to those in negative or neutral moods. According to research of George and Brief (1992) this helping behaviour arising from the positive emotions lead to more extra role behaviour, like OCB.

Based on the theoretical explanations and the empirical evidence the following hypotheses are formulated:

**Hypothesis 2:** An increased level of positive psychological capital leads to a significant increase of the level of self-rated OCB.

**Hypothesis 3:** An increased level of positive psychological capital leads to a significant increase of the level of peer-rated OCB.

**Effect of Psychological Capital on employees’ innovativeness**

Nowadays, organizations need to be innovative to gain competitive advantage (McAdam & Keogh, 2004). Therefore, innovative behaviour by employees is essential for continuous innovation and improvement of the organization (de Jong & den Hartog, 2010). Employees’ innovativeness is a form of extra-role performance and has been defined as ‘the intentional creation, introduction, and application of new ideas within a work role, group, or organization, in order to benefit role performance, the group, or the organization’ (Janssen, 2004, p. 202). Innovation is often confused with the construct of creativity. To make this clear, creativity can be seen as a crucial component of innovation and is about the creation of new ideas. Creativity has been defined as ‘coming up with fresh ideas for changing products, services, and processes so as to better achieve the organization’s goals’ (Amabile, Barsage, Mueller, & Staw, 2005, p 367). Innovativeness differs from creativity and is seen as a successful implementation of creative ideas (Nayak, Agarwal, and Director, 2011). So, creativity is a starting point and necessary for innovative behaviour, but not sufficient (Amabile, 1996). In addition, innovativeness differs from creativity because it is explicitly intended to deliver benefits for the organization (de Jong & den Hartog, 2005).

Innovative behaviour requires a wide range of cognitive and socio-political efforts from an individual (Kanter, 1988). An individual’s innovative behaviour is disseminated in
different phases. The first phase is idea generation, in which an individual creates novel and useful ideas (Amabile et al., 2005). The second phase is idea development, in which an individual gathers support and obtains approvals from managers and peers for backing the idea (Kanter, 1988). The third phase is idea realization, in which ideas are transformed into useful application (Kanter, 1998). However, innovative behaviour originates not only from creative ideas generated by a person themself, but from creative ideas generated elsewhere (Amabile, 1996).

According to Hirschman (1980), innovativeness is not genetically determined, but social influenced. Therefore, the expectation is that individuals with positive PsyCap will show more innovativeness. There are three theoretical reasons that could explain the relationship between PsyCap and innovativeness. Firstly, the construct of PsyCap generally leads to goal attainment through the ability of an individual to find various pathways to success, which might include finding creative solutions even though this is not part of the job description (Norman et al., 2010). When these creative solutions are implemented, the individual will show innovative behaviour. Secondly, according Fredrickson’s (1998, 2001) ‘broaden-and-build’ theory, individuals who have built-up their psychological resources (PsyCap) and encounter positivity are able to see obstacles in their work in a broader perspective. Positive emotions expand the pattern of actions and thoughts in the form of play and exploration (Fredrickson & Losada, 2005). With this broader perspective and explorative behaviour, individuals will be able to show more innovativeness by generating better ideas and implementing them in the organization (Fredrickson, 1998). Thirdly, the core construct of PsyCap, composed of hope, optimism, self-efficacy and resilience, has a synergistic effect. The relationship between the construct of PsyCap and innovativeness is not extensively described in the theory, but theories of the relationship between the single components of PsyCap and innovativeness are more comprehensive and explain the relationship.

Hopeful individuals effectively tailor their routes and think of alternative pathways to reach their goals (Snyder, 2002). According to Zhou and George (2003), they approach problems and opportunities from different perspectives and solve them by developing creative ideas. Even with tight budgets, hopeful individuals are likely to be creative and resourceful (Luthans, et al., 2007). By showing more creative behaviour and searching for alternative pathways, individuals will show more innovativeness.
Individuals high in self-efficacy are inventive, resourceful (Bandura, 2000) and seem to be more creative (Amabile, 1996). When individuals are confronted with any setbacks or have to cope with emotional states that hinder their performance, belief in their self-efficacy will help them to keep on going (Bandura & Locke, 2003). According to Scott and Bruce (1994) innovative work behaviour is affected by an individual’s confidence in their own capabilities. Therefore, it is likely that individuals with positive self-efficacy will show more innovativeness.

Resilient individuals bring out positive emotions in others as well as in themselves (Fredrickson, 2004). These positive emotions contribute to a supportive environment for innovative behaviour. In addition, individuals high in resilience have the ability to easily adjust to changes (Luthans, et al., 2007), which are a common by-product of innovation.

Optimists are expected to show more innovative behaviour because they see and internalize the good things in life, not only in the past and the present, but in the future (Luthans et al., 2007). They help others to focus on the positive aspects of the activities that, in all likelihood, will lead to constructive patterns of thinking. According Carmeli, Meitar, and Weisberg (2006), this way of thinking is essential in the first phase of innovation where recognizing problems and generating fresh ideas is central.

The direct relationship between PsyCap and employee innovativeness has not been studied extensively. Abbas and Raja (2011) conducted a study about the direct effect of positive PsyCap and supervisory rated innovative behaviour. In this study, individuals with positive PsyCap showed more innovative behaviours than individuals low in PsyCap.

Babalola (2009) investigated the relationship between self-efficacy, a component of PsyCap, and entrepreneurial innovative behaviour and concluded that women with high self-efficacy scored higher on this behaviour.

Based on the theoretical explanations and empirical evidence, the following hypotheses were formulated:

**Hypothesis 4:** An increased level of positive psychological capital leads to a significant increase in the level of self-rated innovativeness.

**Hypothesis 5:** An increased level of positive psychological capital leads to a significant increase in the level of peer-rated innovativeness.
Mediating effect of psychological capital

Previous studies did not focus on the effect of strengths interventions on OCB and innovativeness mediated by PsyCap. Currently, there are no other studies relating these variables. Based on the explanation given about the direct effect of strengths intervention on PsyCap, and in turn the direct effect of PsyCap on OCB and innovativeness this study proposes that PsyCap fully mediates these relationships. Fredrickson’s (1998, 2001) broaden-and-build theory can explain why employees engage in behaviours that are not included in their formal job description. In strengths intervention, individuals will build up their psychological resources (PsyCap) and experience a positive activity. This will broaden their attention and focus, their patterns of thinking, and their behaviour, which enables them to show more extra-role performance such as OCB and innovativeness. Based, on this theory, the following hypotheses were formulated.

Hypothesis 6: The relationship between strengths intervention and self-rated OCB is fully mediated by PsyCap.

Hypothesis 7: The relationship between strengths intervention and peer-rated OCB is fully mediated by PsyCap.

Hypothesis 8: The relationship between strengths intervention and self-rated innovativeness is fully mediated by PsyCap.

Hypothesis 9: The relationship between strengths intervention and peer-rated innovativeness is fully mediated by PsyCap.
To visualize the theoretical framework, Figure 1 contains the conceptual model of this study, including the hypotheses.

Figure 1. Conceptual model
Research Method

Research set-up

To test the hypotheses, a quasi-experimental field experiment was conducted. The Pretest-Posttest Control Group Design (Singleton & Straits, 2005) was used to explore the effect of a strengths intervention, mediated by PsyCap, on OCB and innovativeness. Employees of the organization where the study was conducted received an invitation to voluntarily participate in the strengths intervention. Participants were divided into two groups – the experimental group (N=31) and the waitlist-control group (N=39) – based on the date on which they signed up for the intervention. The experimental group participated in the strengths intervention and the wait-list control group received the workshop after the data collection was finished. The research set-up was as follows:

<table>
<thead>
<tr>
<th>Experimental group</th>
<th>M1</th>
<th>S</th>
<th>M2</th>
<th>M3</th>
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</thead>
<tbody>
<tr>
<td>Waitlist-control group</td>
<td>M4</td>
<td>M5</td>
<td>M6</td>
<td>S</td>
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</table>

The experimental group received an online pre-test questionnaire (M1), and then they participated in the strengths intervention (S). Directly after the intervention they received a brief post-test questionnaire on paper (M2) to measure the mediator PsyCap. A month after the intervention they received a follow-up questionnaire online (M3). The waitlist-control group also received an online pre-test questionnaire (M4), but they did not participate in a strengths intervention. They received a brief post-test questionnaire online (M5) to measure the mediator PsyCap, and finally, they received an online follow-up questionnaire (M6). To gain collaboration, the wait-list control group received the strengths intervention after this follow-up questionnaire.

In addition, this study included peer-ratings of the participant’s direct colleagues. These peer-measurements were used to measure the expected outcomes of the strengths intervention, OCB and innovativeness more objectively. In the pre-test questionnaire (M1 or M4) participants were asked to fill in the name of a direct colleague and for permission to send his/her colleague two questionnaires. These two questionnaires were: a pre-test questionnaire and a follow-up questionnaire a month after the participant did or did not
participate in the strengths intervention (this depended on his/her participation in the experimental group or the waitlist-control group).

Sample

The study focused on young professionals working in a Dutch construction company. The experimental group consisted of 31 employees and the wait-list group of 39 employees. The age of the participants ranged from 21 to 34 years old, with a mean age of 28.1. The sample consisted of 65.3% (47) male and 34.7% (25) female participants. The educational background of the participants was divided into Academic Degree (37.5%), Higher Vocational Education (37.5%) and Intermediate Vocational Education (25%). The mean tenure of the participants in the organization was 3.46 years, ranging from between less than one year to 16 years. This data is presented in Table 1.

Table 1
Demographic characteristics of sample

<table>
<thead>
<tr>
<th>Control variables</th>
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<tbody>
<tr>
<td>Average age (yr.)</td>
<td>28.1</td>
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<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>65.3%</td>
</tr>
<tr>
<td>Female</td>
<td>34.7%</td>
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<tr>
<td>Tenure</td>
<td>3.46</td>
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<tr>
<td>Educational background</td>
<td></td>
</tr>
<tr>
<td>Academic Degree</td>
<td>37.5%</td>
</tr>
<tr>
<td>Higher Vocational Education</td>
<td>37.5%</td>
</tr>
<tr>
<td>Intermediate Vocational Education</td>
<td>25%</td>
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</table>

Procedure

Employees who were interested in participating in the strengths intervention could nominate themselves for a particular date on which a strengths intervention was organized. Participants did not know if they were in the experimental or the wait-list control group, so simply signed in for one of the four workshops offered. Due to the busy time-schedules of the participants, randomization was not possible. However, no significant differences between group members were expected. The sample can be considered to be a convenience sample due to the fact that employees could choose to participate. In total, four workshops were conducted. A distorting factor that needed to be taken into consideration was the possible communication between the participants in the experimental group and those in the wait-list control group. This communication had to be minimalized otherwise the experimental group
could influence the control group and that would have an effect on the outcome of this study. This was controlled by the great diffusion of employees in the whole organization. The participants work in different locations and departments within the organization, so it was expected that there would be limited communication between them.

**Measurement**

Questionnaires were used to measure the variables for this study as follows:

*Psychological Capital (PsyCap)* was measured using a shortened version of existing questionnaires for optimism, self-efficacy, hope, and resilience based on results from prior studies. The respondents could answer on a five-point Likert scale from one (1= strongly disagree) to five (5= strongly agree).

Optimism was measured using four items from Life Orientation Test-Revised (LOT-R) (Sheier, Carver, & Bridges, 1994), translated to Dutch by ter Klooster et al. (2010). The scale included items such as ‘I am optimistic about my future’.

Self-efficacy was measured using four items from Chen, Gullym and Eden’s (2001) New general self-efficacy scale, for this study translated to Dutch by the back translation. The scale included items such as ‘When facing difficult tasks, I am certain that I will accomplish them’.

Hope was measured using four items from Snyder, et al. (1996) state hope scale, translated to Dutch by Baneke (2001). The scale included items such as ‘At the present time I am energetically pursuing my goals’.

Resilience was measured using four items of from Smith, et al. (2008) Brief Resilience Scale, for this study translated to Dutch by the back translation. The scale included items such as ‘I tend to bounce back quickly after hard times’.

The 16 items were subjected to principal component analysis (PCA). The Kaiser-Meyer-Olkin value reported was .765, which was above the recommend value of .600 (Kaiser, 1970, 1974). Bartlett’s test of sphericity (Bartlett, 1954) was significant with .000, supporting the ability to conduct a factor analysis. Based on the eigenvalue criterion (>1), four components should be chosen although the scree plot argues for 1 component. Taking this into account, and the fact that PsyCap is a higher-order factor, one component was chosen. Therefore, the factor analysis was executed with one fixed factor. The factor loadings for all
16 items were found to be above .342. Cronbach’s alpha coefficient of total PsyCap Scale, composed of optimism, self-efficacy, hope, and resilience was .864 for the pre-test questionnaire .785 for the post-test questionnaire, and .864 for the follow-up questionnaire.

Organizational Citizenship Behaviour (OCB) was measured using self-ratings and peer-ratings from direct colleagues. The scale used in both ratings consisted of three items from the Interpersonal Facilitation Scale (van Scotter, Motowidlo & Cross, 2000). This scale included items such as ‘I help others without being asked. In addition, three items from the Job Dedication Scale (van Scotter, et al, 2000) such as ‘I persist in overcoming obstacles to complete a task’ were added. Both were answered on a ten-point scale (1= not applicable, 10= applicable).

Due to the length of the peer-rating questionnaire, a selection of items based on factor loadings on the items and the detectability of change over a short period was provided. The six items from the self-rated OCB scale were subjected to principal components analysis (PCA). The self-rated measurement had a Kaiser-Meyer-Olkin value of 0.689, above the recommend value of .600 (Kaiser, 1970, 1974) and Bartlett’s test of sphericity (Bartlett, 1954) was significant (p=.000), supporting the ability to conduct factor analysis. The PCA analysis, forced with 1 component, explains 42.63% of the explained variance. Factor loadings for all six items were found to be above .490. Cronbach’s alpha coefficient of the OCB self-rated pre-test questionnaire was .702 and .652 for the follow-up questionnaire.

The six items from the peer-rated OCB scale were subjected to a principal components analysis (PCA). The peer-rated measurement had a Kaiser-Meyer-Olkin value of .600 - the recommend value (Kaiser, 1970, 1974) and Bartlett’s test of sphericity (Bartlett, 1954) was significant. The PCA, forced with 1 component, was conducted and the factor loadings of all six items were found to be above .495. The Cronbach alpha coefficient for the OCB peer-rated pre-test questionnaire was .699 and .651 for the follow-up questionnaire.

Innovativeness was measured using self-ratings and the peer-ratings of direct colleagues. The scale was an adapted version of the innovativeness scale (de Jong den Hartog, 2005), based on Kleysen and Street (2001). A selection of three items from the existing eight was made because of the length of the peer-rating questionnaire. The scale for participants
included items such as: ‘In my job, I take a lot of initiatives for change’ The scale for peers included items such as ‘this employee uses a lot of initiative for change’. Both were answered using a ten-point scale (1= not applicable, 10= applicable).

The three items of the self-rated innovativeness scale were subjected to PCA. The Kaiser-Meyer-Olkin value was 0.615, above the recommend value of .600 (Kaiser, 1970, 1974) and Bartlett’s test of sphericity (Bartlett, 1954) was significant (p=.000), supporting the ability to conduct factor analysis. The PCA analysis revealed the presence of 1 component with an eigenvalue above 1, explaining 70.98% of the explained variance. The factor loadings of all three items were found to be above .776. The Cronbach alpha coefficient for the innovativeness self-rated pre-test questionnaire was .793 and .773 for the follow-up questionnaire.

The three items on the peer-rated innovativeness scale were also subjected to a PCA. The Kaiser-Meyer-Olkin value was 0.730, above the recommend value of .600 (Kaiser, 1970, 1974) and Bartlett’s test of sphericity (Bartlett, 1954) was significant (p=.000), supporting the ability to conduct factor analysis. The PCA analysis revealed the presence of 1 component with an eigenvalue above 1, explaining 79.57% of the explained variance. Factor loadings of all three items were found to be above .870. Cronbach’s alpha coefficient for the innovativeness peer-rated pre-test questionnaire was .867 and .773 for the follow-up questionnaire.

Gender and educational level of the respondents will be used as control variables.

Statistical analysis

In order to analyse the data obtained from the questionnaires, the following actions were conducted in SPSS: First, the data was checked for missing values and mistakes. After the data was checked for accuracy, a Pearson correlation analysis was conducted for all variables at all measurement points. This gave an indication about the direction and the strength of the relationships of the variables. In addition, the significance levels of the indicated relationships were assessed. Third, a mixed between- within-subjects analysis of variance (ANOVA) was conducted to check whether there were significant differences between the experimental and wait-list control group. The experimental condition was the between-subjects factor, and time was the within-subject factor. This analysis tested the effect
of a strengths intervention on OCB and innovativeness over time and showed if there was a change over the two time periods. Thus, this analysis made a distinction between the groups with participants who joined and did not join the intervention. To check for significant differences over time a paired-sample t-test was conducted. Fourth, three sequential multiple regressions (Tabachnick & Fidell, 2007) were conducted to investigate the effect of the strengths intervention on either PsyCap (t1) or on OCB and Innovativeness (t2). Variables were entered in different blocks.

In order to test the effect of a strengths intervention on PsyCap the following sequential multiple regressions were conducted. In the first block the control variables (gender and education), baseline PsyCap (t0) were entered. The grouping variables were entered in the second block.

In order to test PsyCap as a mediator in the relationship of strength intervention and OCB the following sequential multiple regression was conducted. In the first block the control variables (gender and education) and OCB (t0) were entered. The grouping variable was entered in the second block. In the third block, the hypothesized mediator PsyCap (t1) was entered to predict the OCB (t2).

In order to test PsyCap as a mediator in the relationship of strength intervention and innovativeness, the following sequential multiple regression was conducted. In the first block the control variables (gender and education) and innovativeness (t0) were entered. The grouping variable was entered in the second block. In the third block the hypothesized mediator PsyCap (t1) was entered to predict innovativeness (t2).

There is some form of mediation supported when the following two conditions are met. (1) The strengths intervention has an effect on PsyCap. (2) The effect of PsyCap on OCB or innovativeness is significant while controlling for strengths intervention. If strengths intervention is no longer significant when PsyCap is entered into the regression equation it is a full mediation. If strengths intervention is still significant, the finding supports partial mediation.

Constructing bootstrap confidence intervals checked the significance of the indirect effect of strengths intervention on OCB and innovativeness. The bootstraps were created by resampling with replacement from the formal sample of the study, an assessment was made about which confidence interval the mean will be.
Results

Pearson product-moment correlations (Pallant, 2010) were calculated in order to analyse the relationships between strengths intervention, PsyCap, OCB, innovativeness and the control variables. The means, standard deviations and correlations of the different variables are shown in Table 2. At the pre-test PsyCap had a high and significant correlation with the grouping variable, so both groups differed before the workshops even started. In addition, this significant correlations was still present at the post-test. Contrary to the expectations, analysis showed that the grouping variable (experimental or wait-list group) had no significant relationships with the other dependent variables.
### Table 2. Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. OCB pre-test (self-rated)</td>
<td>7.60</td>
<td>.76</td>
<td>(.702)</td>
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<tr>
<td>2. OCB follow-up (self-rated)</td>
<td>7.45</td>
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<td>.592**</td>
<td>.652</td>
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<tr>
<td>3. OCB pre-test (peer-rated)</td>
<td>7.52</td>
<td>.86</td>
<td>.025</td>
<td>.223</td>
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<td>4. OCB follow-up (peer-rated)</td>
<td>7.53</td>
<td>.86</td>
<td>-.102</td>
<td>.062</td>
<td>.666**</td>
<td>(.651)</td>
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<td>5. Innovativeness pre-test (self-rated)</td>
<td>7.86</td>
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<td>.090</td>
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<td>(.793)</td>
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<tr>
<td>6. Innovativeness follow-up (self-rated)</td>
<td>7.27</td>
<td>1.22</td>
<td>.301*</td>
<td>.523**</td>
<td>.113</td>
<td>.010</td>
<td>.323*</td>
<td>(.773)</td>
<td></td>
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<tr>
<td>7. Innovativeness pre-test (peer-rated)</td>
<td>7.98</td>
<td>1.20</td>
<td>-.042</td>
<td>.203</td>
<td>.642**</td>
<td>.552**</td>
<td>.189</td>
<td>.266</td>
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<td>8. Innovativeness follow-up (peer-rated)</td>
<td>7.86</td>
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<td>.657**</td>
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<td>(-773)</td>
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<td>9. PsyCap pre-test</td>
<td>3.84</td>
<td>.50</td>
<td>.508**</td>
<td>.553**</td>
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<td>.091</td>
<td>.308**</td>
<td>.341**</td>
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<td>10. PsyCap post-test</td>
<td>3.93</td>
<td>.38</td>
<td>.266*</td>
<td>.335*</td>
<td>.175</td>
<td>.114</td>
<td>.370**</td>
<td>.287*</td>
<td>.005</td>
<td>-.043</td>
<td>.743**</td>
<td>(.785)</td>
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<tr>
<td>11. PsyCap follow-up</td>
<td>3.93</td>
<td>.46</td>
<td>.361**</td>
<td>.529**</td>
<td>.157</td>
<td>.083</td>
<td>.337*</td>
<td>.437**</td>
<td>.054</td>
<td>-.091</td>
<td>.754**</td>
<td>.697**</td>
<td>(.864)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Experimental or wait-list group</td>
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<td>.50</td>
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<td>-.013</td>
<td>-.025</td>
<td>.113</td>
<td>-.014</td>
<td>-.070</td>
<td>-.010</td>
<td>.038</td>
<td>.326**</td>
<td>.290*</td>
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<tr>
<td>13. Gender</td>
<td>1.35</td>
<td>.48</td>
<td>.137</td>
<td>-.130</td>
<td>-.022</td>
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<td>-.145</td>
<td>.190</td>
<td>.025</td>
<td>-.212</td>
<td>-.171</td>
<td>.047</td>
<td></td>
</tr>
<tr>
<td>14. Education</td>
<td>4.13</td>
<td>.79</td>
<td>-.015</td>
<td>-.098</td>
<td>.022</td>
<td>.042</td>
<td>.261*</td>
<td>-.046</td>
<td>.104</td>
<td>-.015</td>
<td>.109</td>
<td>-.026</td>
<td>.146</td>
<td>-.035</td>
<td>.257*</td>
</tr>
</tbody>
</table>

* Cronbach's alpha on the diagonal

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).
A mixed between- within-subject ANOVA was executed to test the differences between the experimental and wait-list group participants’ scores on PsyCap across three time periods (pre-test, post-test and follow-up test). The interaction between group (experimental or wait-list) and time was significant: Wilks’s Lambda = .83, F (2, 52) =5.24, \( p = 0.008 \), partial eta squared = .17. This interaction effect only explained that the change in PsyCap for the different groups differed over time, but do not indicated the direction of this relationship. The main effect of group on PsyCap was not found to be significant (\( p = .136 \), F = 2.29, partial eta squared = .041). In addition, there was no substantial main effect for time, Wilk’s Lambda = .92, F (2, 52) =2.28, \( p = .112 \), partial eta squared = 0.08. Table 3 and Figure 2 present the level of PsyCap of the experimental group that increased directly after the intervention (post-intervention) and decreased a month after the intervention (follow-up). The paired-sample t-test showed that this increase (post-intervention) is not significant, \( t (28) = -.423, p = .338 \). The decrease at the follow-up measurement is significant \( t (24) = 1.75, p = .047 \) (one-tailed). This is in contrast with the wait-list group whereby the level of PsyCap increase in time. The paired-sample t-test showed that this increase from the pre-intervention to the post-intervention was not significant, \( t (32) = -1.50, p = .071 \) (one-tailed). The decrease from the post-intervention to the follow-up measurement is almost significant, \( t (29) = -1.66, p = .054 \) (one-tailed). Although a significant interaction effect is found, most of the effects over time were not significant.

Table 3 Scores on PsyCap for the experimental and wait-list group

<table>
<thead>
<tr>
<th>Time period</th>
<th>Experimental group</th>
<th>Wait-list group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Pre-intervention</td>
<td>25</td>
<td>3.99</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>25</td>
<td>4.05</td>
</tr>
<tr>
<td>Follow-up (1 month)</td>
<td>25</td>
<td>3.92</td>
</tr>
</tbody>
</table>
Hierarchical multiple regression was conducted to assess the effect of participating in the strengths intervention on the level of PsyCap, after controlling for gender and education (Table 4). Gender, education and baseline PsyCap (t0) were entered in Block 1 and explained 60.7% (F (3, 58) = 29.88, p = 0.000) of the variance of PsyCap (t1). In Block 2 the grouping variable was added and this did not lead to a significant increase in the explained variance (ΔR² = .003). Hypothesis 1, about the effect of the strengths intervention on the level of positive PsyCap, is not enough supported based on the significant interaction effect of group and time in the mixed between-within ANOVA.
Because of the significant correlation between group and baseline PsyCap, a regression analyses was conducted to test whether the group would have a significant effect on PsyCap (t1) when not controlling for baseline PsyCap. In line with the results from the ANOVA, these results showed a significant effect for group on PsyCap (t1) in this situation. The addition of the grouping variable explained significantly ΔR²= .091 of the variance of the model.

To test the differences between the experimental and wait-list group on self-rated OCB across two time periods, a mixed between- within-subject ANOVA was conducted. The interaction between group and time was not significant: Wilk’s Lambda =1.00, F(1.55)= .07, \( p=.791 \), partial eta squared =.001. In addition, the main effect of the group was not significant (p =.987, F = .00, partial eta squared = .000). Furthermore, there is not a substantial main effect for time: Wilk’s Lambda =.938, F(1.55) = 3.6, \( p =.062 \) partial eta squared =.062. Table 5 and Figure 3 show that the level of self-rated OCB for both the experimental and the wait-list groups decreased. A paired-samples t-test was conducted to evaluate the significance level of this decrease. There was not a significant decrease in the OCB scores for the experimental group \( t (24) = 1.44, p = .163 \). This also applies to the wait-list group \( t (31) = 1.24, p = .223 \).
Hierarchical multiple regression was conducted to assess the effect of participating in the strengths intervention on the level of self-rated OCB mediated by PsyCap (t1), after controlling for gender and education (Table 6). Gender, education and baseline OCB (t0) were entered in Block 1 and significantly explains 40% (F(2,52) = 17.06, p = .000) of the variance OCB (t3). Entering the grouping variable in Block 2 did not lead to a significant increase in the explained variance (Δ R²=.00, β = .01 p = .936). PsyCap was added in Block 3 to test the mediation effect, but this addition did not lead to a significant increase in the explained variance (Δ R²=.02, β = -.19 p = .207). Hypotheses 6, stating that PsyCap fully mediates the relationship of strengths intervention and OCB, was rejected based on the ANOVA and
multiple regression. Hypothesis 2, which stated that an increased level of PsyCap leads to an increased level of self-rated OCB, was rejected based on the regression analyses.

Table 6 Results: multiple regression with dependent variable self-rated OCB.

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>OCB (t3)</th>
<th>b</th>
<th>SE</th>
<th>β</th>
<th>b</th>
<th>SE</th>
<th>β</th>
<th>b</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>- .31</td>
<td>.17</td>
<td>- .21</td>
<td>- .31</td>
<td>.17</td>
<td>- .21</td>
<td>- .30</td>
<td>.17</td>
<td>- .20</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>- .03</td>
<td>.10</td>
<td>- .04</td>
<td>- .03</td>
<td>.10</td>
<td>- .04</td>
<td>- .10</td>
<td>.10</td>
<td>- .11</td>
<td></td>
</tr>
<tr>
<td>OCB (baseline)</td>
<td>.59</td>
<td>.10</td>
<td>.62***</td>
<td>.59</td>
<td>.11</td>
<td>.62***</td>
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<td>.12</td>
<td>.38***</td>
<td></td>
</tr>
<tr>
<td>Group</td>
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<td></td>
<td></td>
<td>.01</td>
<td>.16</td>
<td>.01</td>
<td>- .18</td>
<td>.16</td>
<td>- .13</td>
<td></td>
</tr>
<tr>
<td>PsyCap (t2)</td>
<td></td>
<td></td>
<td></td>
<td>- .36</td>
<td>.31</td>
<td>- .36</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R²                  | .40**    | .40 | .42  |
ΔR²                 | .00      | .02 |

Note: N=55, b=unstandardized regression coefficient, SE= standard error, β= standardized regression coefficient
Gender (1=’male’, 0=’female’).
Education: (1=’elementary’, 2=’basic’, 3=’secondary’, 4=’higher’, 5=’academic’).
Groupb (1= ‘experimental group’, 0 = ‘wait-list group’).
* p<.05.
**p<.01.

The differences between the experimental group and wait-list group on peer-rated OCB across two time periods was also assessed, with a mixed between-within subject ANOVA. The interaction between group and time was significant: Wilk’s Lambda =.943, F (1.47) = 2.83, p=.05 (one-tailed), partial eta squared =.057. The main effect for group was not significant, F = 0.03, p = 0.436 (one-tailed), partial eta squared = .001. In addition, there was not a significant substantial main effect for time: Wilk’s Lambda =.984, F(1.47) = .78, p=.192 (one-tailed) partial eta squared =.016. Table 7 and Figure 4 show that the experimental group had an increase of peer-rated OCB one month after the intervention (post-intervention). The wait-list group showed a decrease of peer-rated OCB in this follow-up measurement. A paired-samples t-test was conducted to evaluate the significance level of this effect of time. The increase of the peer-rated OCB for the experimental group was significant, t (22) = -1.73, p = .050(one-tailed). In contrast, the decrease of OCB for the wait-list group was not significant, t (25) = .59, p = .279 (one-tailed).
To assess the effect of participating in the strengths intervention on the level of peer-rated OCB mediated by PsyCap (t1), a hierarchical multiple regression was conducted. Gender, education and baseline OCB (t0) were entered in Block 1 and significantly explains 48% (F(2,46) = 21.30, p = .000) of the variance OCB (t2). The grouping variable was entered in Block 2. This addition did not lead to a significant increase of the explained variance (Δ R²=.01, β = .12 p = .261). PsyCap (t1) was added in Block 3 to test the mediating effect. This did not lead to a significant increase in the explained variance (Δ R²=.00, β = .00 p = .988).

Hypothesis 7, which stated that PsyCap fully mediates the relationship between strengths intervention and peer-rated OCB, was rejected based on the mixed between-within ANOVA and the multiple regression. However, a significant direct relationship between strengths
intervention and peer-rated OCB was found. Hypothesis 3, which stated that an increased level of PsyCap leads to an increased level of OCB, was rejected based on the regression analysis.

Table 8 Results multiple regression with dependent variable peer-rated OCB.

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>OCB (t3)</th>
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<tr>
<td></td>
<td>b</td>
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<tr>
<td>Gendera</td>
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<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.02</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OCB (baseline)</td>
<td>.52</td>
<td>.09</td>
<td>.68**</td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td>.16</td>
<td>.09</td>
<td>.67**</td>
<td></td>
</tr>
<tr>
<td>PsyCap (t2)</td>
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<td>.12</td>
<td>.67**</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.48**</td>
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<td></td>
</tr>
<tr>
<td>ΔR²</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N= 49, b=unstandardized regression coefficient, SE= standard error, β= standardized regression coefficient
Gendera (1='male', 0='female').
Education: (1='elementary=', 2='basic', 3='secondary', 4='higher', 5='academic').
Groupb (1= ‘experimental group’, 0 = ‘wait-list group’).
* p<.05.
**p<.01.

A mixed between-within subject ANOVA was conducted to test the differences between the experimental and wait-list group on participants’ scores on self-rated innovativeness across two time periods (pre-test and follow-up test). The interaction between group (experimental or wait-list) and time was not significant: Wilk’s Lambda = .99, F(1,55) =0.83, p = 0.366, partial eta squared =.015. The main effect of the group was not significant (p =.976, F = .06, partial eta squared = .000) but there was a substantial main effect for time on the level of innovativeness: Wilk’s Lambda = .78, F (1,55) =14.17, p = .000, partial eta squared =.205. Table 9 and Figure 5 show that both the experimental group and wait-list group had a decrease in the level of innovativeness one month after the strengths intervention. A paired-samples t-test was conducted to confirm the significance level of the effect of time. The decrease of the self-rated innovativeness of the experimental group was significant, t (24) = 2.74, p = .011 (two-tailed). As well as the significant decrease of innovativeness for the wait-list group, t (31) = 2.45, p = .020 (two-tailed).

Table 9 Scores on self-rated innovativeness for the experimental and wait-list group.

<table>
<thead>
<tr>
<th>Time period</th>
<th>Experimental group</th>
<th>Wait-list group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Pre-intervention</td>
<td>25</td>
<td>8.02</td>
</tr>
<tr>
<td>Follow-up (1 month)</td>
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<td>7.17</td>
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</tbody>
</table>
Hierarchical multiple regression was conducted to assess the effect of participating in the strengths intervention on the level of self-rated innovativeness mediated by PsyCap (t1), after controlling for gender and education (Table 10). Gender, education and baseline innovativeness (t0) were entered in Block 1 and explains 12% ($F(2,52) = 3.041, p = .056$) of the variance of innovativeness (t2), but were not significant. The grouping variables were entered in Block 2. This addition did not lead to a significant increase in the explained variance ($\Delta R^2=.01, \beta = -.07, p = .628$). PsyCap (t1) was entered in Block 3, but this addition did not lead to a significant increase in the explained variance ($\Delta R^2=.04, \beta = .24, p = .108$). Hypotheses 4, which stated that an increased level of PsyCap leads to a significant level of self-rated innovativeness, was rejected based on the mixed between-within ANOVA and the multiple regression analyses. As well as hypothesis 8, which stated that PsyCap fully mediates the relationship between strengths intervention and self-rated innovativeness.
The effects of a strength-based intervention on psychological capital, organizational citizenship behaviour and innovativeness

Table 10 Results multiple regression with dependent variable self-rated innovativeness.

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Innovativeness (t3) b</th>
<th>SE</th>
<th>β</th>
<th>b</th>
<th>SE</th>
<th>β</th>
<th>b</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.04</td>
<td>.35</td>
<td>.02</td>
<td>.05</td>
<td>.35</td>
<td>.05</td>
<td>.16</td>
<td>.35</td>
<td>.06</td>
</tr>
<tr>
<td>Education</td>
<td>-.23</td>
<td>.22</td>
<td>-.15</td>
<td>-.23</td>
<td>.22</td>
<td>-.15</td>
<td>-.21</td>
<td>.22</td>
<td>-.13</td>
</tr>
<tr>
<td>Innovativeness (baseline)</td>
<td>.39</td>
<td>.15</td>
<td>.28**</td>
<td>.39</td>
<td>.15</td>
<td>.36**</td>
<td>.30</td>
<td>.16</td>
<td>.27</td>
</tr>
<tr>
<td>Groupb</td>
<td>-.45</td>
<td>.33</td>
<td>-.07</td>
<td>-.35</td>
<td>.34</td>
<td>-.14</td>
<td>.76</td>
<td>.49</td>
<td>.24</td>
</tr>
<tr>
<td>PsyCap (t2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R²                                      | .12                   | .13 | .17 |
AR²                                     |                       | .01 | .04 |

Note: N= 55, b=unstandardized regression coefficient, SE= standard error, β= standardized regression coefficient
Gendera (1='male', 0='female').
Education: (1='elementary', 2='basic', 3='secondary', 4='higher', 5='academic').
Groupb (1='experimental group', 0 = 'wait-list group').
*p<.05.
**p<.01.

A mixed between-within subject ANOVA was executed to test the differences between the experimental and wait-list group on participants’ scores on peer-rated innovativeness across two time periods (pre-test and follow-up test). The interaction between group (experimental or wait-list) and time was not significant: Wilk’s Lambda = .96, F(1,47) = 1.85, p = 0.09 (one-tailed), partial eta squared =.038. The main effect of group is not significant, p =.306 (one-tailed), F = .261, partial eta squared = .006. And there was not a significant substantial main effect for time in the level of innovativeness: Wilk’s Lambda = .99, F(1,47) = 1.00, p = .342 (one-tailed), partial eta squared =.004. Table 11 and Figure 6 show that the experimental group has an increase of peer-rated innovativeness one month after the intervention (follow-up measurement). The wait-list group showed a decrease of innovativeness in the follow-up measurement. A paired-samples t-test was conducted to evaluate the significance level of the effect of time. The increase of the peer-rated innovativeness of the experimental group was not significant, t (22) = -.68, p = .503 (two-tailed). As well as the significant decrease of peer-rated innovativeness for the wait-list group, t (25) = 1.25, p = .224 (two-tailed).

Table 11 Scores on peer-rated innovativeness for the experimental and wait-list group

<table>
<thead>
<tr>
<th>Time period</th>
<th>Experimental group</th>
<th></th>
<th></th>
<th>Wait-list group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Pre-intervention</td>
<td>23</td>
<td>7.77</td>
<td>1.22</td>
<td>23</td>
<td>8.10</td>
<td>1.30</td>
</tr>
<tr>
<td>Follow-up (1 month)</td>
<td>23</td>
<td>7.89</td>
<td>.82</td>
<td>23</td>
<td>7.86</td>
<td>1.05</td>
</tr>
</tbody>
</table>
Hierarchical multiple regression was conducted to assess the effect of participating in the strengths intervention on the level of peer-rated innovativeness mediated by PsyCap (t2), after controlling for gender and education (Table 12). Gender, education and baseline innovativeness (t0) were entered in Block 1 and significantly explains 53% (F(2,46) = 23.06, p = .000) of the variance of innovativeness (t2). The grouping variables were entered in Block 2. This addition did not lead to a significant increase in the explained variance (Δ R²=.00, β = .02, p = .763). PsyCap (t2) was entered in Block 3 to test the mediating effect. This addition did not lead to a significant increase of in the explained variance (Δ R²=.00, β = .02, p = .957). Hypothesis 9, which stated that PsyCap fully mediates the relationship between strengths intervention and peer-rated innovativeness, was rejected based on the mixed between-within ANOVA and regression analyses. As well as Hypothesis 5, which stated that an increased level of PsyCap leads to an increased level of peer-rated innovativeness.
Table 12 Results multiple regression with dependent variable peer-rated innovativeness.

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Innovativeness (t3)</th>
<th>Innovativeness (t3)</th>
<th>Innovativeness (t3)</th>
<th>Innovativeness (t3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE</td>
<td>β</td>
<td>b</td>
</tr>
<tr>
<td>Gendera</td>
<td>.66</td>
<td>.21</td>
<td>.34**</td>
<td>.66</td>
</tr>
<tr>
<td>Education</td>
<td>-.21</td>
<td>.13</td>
<td>-.18</td>
<td>-.21</td>
</tr>
<tr>
<td>Innovativeness (baseline)</td>
<td>.56</td>
<td>.08</td>
<td>.71**</td>
<td>.56</td>
</tr>
<tr>
<td>Groupb</td>
<td>.04</td>
<td>.19</td>
<td>.02</td>
<td>.04</td>
</tr>
<tr>
<td>PsyCap (t2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.53**</td>
<td></td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>ΔR²</td>
<td>.00</td>
<td></td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

Note: N= 49, b=unstandardized regression coefficient, SE= standard error, β= standardized regression coefficient
Gendera (1='male', 0='female').
Education: (1='elementary', 2='basic', 3='secondary', 4='higher', 5='academic').
Groupb (1 = 'experimental group', 0 = 'wait-list group').
* p<.05.
**p<.01.
Conclusion and Discussion

The aim of this research was to study the effect of a strengths intervention on the level of OCB and innovativeness, and if this relationship could possibly be mediated by PsyCap. In a period of two months, empirical evidence was collected using a quasi-experimental study to answer the research question: To what extent does a strengths-based intervention lead to an increased level of employees’ positive psychological capital (PsyCap) and organizational citizenship behaviour (OCB) and innovativeness? Nine hypotheses were formulated to find an answer to this question.

Results for Hypothesis 1 indicated that participating in a strength intervention does not lead to higher levels of PsyCap. Analysis shows that immediately after the strengths intervention participants’ level of PsyCap increased, but this was not significant. A month after the strengths intervention the level of PsyCap was even lower than before the strengths intervention. This result demonstrates that the strengths intervention showed no effect on the longer term. There are three possible explanations for this. Firstly, participants quickly forget what they have experienced and learned in the intervention when they return to their daily work. Based on literature about the transfer of training, the lack of a follow-up moment can explain why PsyCap decreased when participants went back to their work. Broad and Newstrom (1992) suggested that important elements of the transfer of the training not only exist before or during the training, but also afterwards. Participants had stronger intentions to transfer the training to their job when there was a form of post-training (Baldwin, Magjuka & Loher, 1991). So, the intervention would possibly have more effect on PsyCap when a form of post-training was incorporated. For instance, a return moment were the participants come together one more time to refresh their knowledge, receive extra tools and share experiences of their daily practice. Secondly, the effect of the strengths intervention might have lost its power over time because participants may have felt a lack of support in their work environment. Some weeks after the intervention several participants mentioned that is was hard to make more use of their strengths because the workplace in which they returned stayed the same. They experienced not much support from their manager and colleagues for what they have learned in the intervention. While this support is needed according to Luthans et al. (2007), their research demonstrated that participants experience a higher level of PsyCap when they perceive a supportive climate in their organization. A supportive organizational climate can be described as the amount of support that an employee perceives from their direct colleagues, their supervisor, and other divisions helping him/her to successfully achieve
their job tasks. Finally, the experimental group started with a higher level of PsyCap compared to the wait-list group. There was a significant difference that might have influenced the results of the regression analysis. The difference may have arisen due to the semi-randomization of the sample. Participants who experienced a higher level of PsyCap may have signed in for the earlier workshops because they felt better able to join the workshop in a shorter time period. On the other hand, participants who experienced lower levels of PsyCap might have felt more comfortable planning the workshop in a longer period of time. This difference between the experimental and wait-list group might distort the findings of this research. Making it harder to increase PsyCap of the experimental group because it is already higher.

It stands out that there is a significant effect of gender on the level of PsyCap. Men experiences lower levels of positive PsyCap than women do (effect size -.22). This is in contrast with the study from Avey (2014) about the antecedents of PsyCap. In this research gender was not found to be a significant predictor of PsyCap. A possible explanation is that this current research is conducted in a male-dominated organization and industry. This makes it easy to hypothesize that men will experience higher levels of PsyCap. While the entrance of women in this male-dominated organizations would require even higher levels of PsyCap, and thus their level of PsyCap will be higher than for men.

This research contributes to the theory by being the first to study the link between a strengths intervention and performance. Hence, PsyCap was not a significant predictor of self- and peer-rated OCB and innovativeness. Therefore hypotheses 2, 3, 4, 5, 6, 8 and 9 were rejected. In addition, there was no direct effect found between the strengths intervention and self-rated OCB, or self- and peer-rated innovativeness. Even though this mediation relationship was expected based on earlier research. To begin with Park, Peterson, and Seligman (2004) who examined that there is a relationship between strengths and life satisfaction. Thus, individuals who know what their strengths are and know how to develop them will have a good feeling about themselves. Subsequent, Fredrickson’s (1998, 2001) broaden-build theory of positive emotions suggest that people who feel good about themselves will be more able to broaden their attention and focus, their patterns of thinking, and their behaviour. Resulting in showing more extra-role performance such as OCB and innovativeness. This relationship may not been found due to the following reasons. Firstly, this research was conducted with a small sample, the size might be too small to report significant results (Pallant, 2010). In addition, Rucker, Preacher, Tormala, and Petty (2011)
demonstrated that more studies found significant results when the sample size increased. Secondly, the preparation exercise for this research was not distributed at the right time. Respondents in the wait-list group received the preparation exercise too early. Therefore, some of them received feedback from people in the surroundings before they had filled in the second and third questionnaire. In this way the respondents in the wait-list group received a form of intervention when they were to receive no intervention at all. Thirdly, an short intervention may not be the right method to identify, develop and use the strengths of the individual. There is on-going discussion in the field of learning and development about the effectiveness of training interventions. In this discussion, there is a movement going from an educational to a more non-educational perspective on learning. According to Doornbos, Bolhuis, and Simons (2004), work-related learning occurs implicitly via work-related and social interaction and not only from formally organized learning programs. Perhaps the workplace itself was also a good place where the participant could identify, develop and use their strengths. Blended learning, a combination of a formal intervention and other ways of learning like learning-on-the-job or e-learning might be more effective than the formal strengths intervention only. According to Baldwin-Evans (2006) blended learning models of formal and informal learning activities that integrates a wide spectrum of functions are the ideal way to empower learners. In this way participants learn also from work-related and social interactions instead of educational training intervention only. Fourth, respondents in the wait-list group knew they would participate in the strengths intervention in the near future. This prospect and the personal attention they received through the invitations and questionnaires may have made them feel happier. According to Wright, Cropanzano, Denney, and Moline (2002) ‘happy workers’, operationalized as psychological well-being, often perform better than ‘unhappy workers’. In this way, the prospect of participating in the intervention may have influenced the results of the wait-list group. Fourthly, according to Harzer and Ruch (in press) different character strengths are associated with different dimensions of job performance. Their study proposed that interpersonal facilitation (the first component of OCB) was related to strengths such as teamwork, leadership, fairness, and kindness. Strengths such as bravery, self-regulation, curiosity, and love of learning were more related to job dedication (the second component of OCB). This means that not all individual strengths automatically lead to more OCB and innovativeness, different strengths may have different effects on different performance aspects. Finally, other predictors than PsyCap might be more important to predict OCB and innovativeness. Research of Mackenzie, Podsakoff and
Ahearne (1998) demonstrated that job satisfaction is a predictor of extra-role performance, like OCB and innovativeness. If individuals are happy in their job it is more likely that they will do more tasks than formally included in their job description. Their research also demonstrated that organizational commitment is positively related with extra-role performance, like OCB and innovativeness. When employees feel committed to their organization they want to walk the extra mile to help their organization. So, this these other predictors might be better mediators in the relationship of strengths intervention and OCB and innovativeness.

On the other hand, a significant relationship was found between the strengths intervention and peer-rated OCB. Thereby, this research is the first that demonstrated this relationship. The relationship between the strengths intervention and peer-rated OCB can be explained by the following. Firstly, the social exchange theory may be the motivational basis behind the behaviour that individuals show but are not listed in the job description. Social exchange theory refers to motivated actions of individuals that are voluntary and executed because of the expected returns from others (Blau, 1964). If individuals participate in the workshop they might have the feeling that they receive something of value from the organization and because of this feeling they want to repay the organization. This repayment can be done by performing more tasks than is formally stated in their job description, thus demonstrating more OCB. Secondly, other mediators that were not included in this research could play a role in this relationship. For example positive affect, because participating in a strength intervention presumably leads to more positive affect. Research of Williams and Shiaw (1999) demonstrated that employees who experience a high amount of positive affect have higher intentions to perform more OCB. Another mediator in this relationship between strengths intervention and OCB could be well-being. Research of Quinlan et al. (2012) demonstrated that strengths intervention positively enhance the level well-being of the participants, which may influence the level of the participants’ OCB.

The difference between the results of self-ratings and peer-ratings may have occurred because individuals may have a different perspective on their own behaviour compared to their peers. According to Paunonen and O’Neill (2010), people are usually not in the best position to assess their own past behaviours. Thus, the peer ratings would be more objective and less selective in recalling events and past behaviours. This may explain the difference between self- and peer-rated OCB and indicates that the results of peer-rated are more objective than the self-rated outcomes. It seems an advantage of self-rated performance that
the participants have the access to their own mental states (e.g. thoughts, feelings, intentions) but this has an opposite effect on the accuracy of self-rated performance (Harris & Schaubroeck, 1988). More specific to innovativeness, respondents may not be able to assess the level of ‘newness/creativity/freshness’ of their own ideas and behaviour. As they came up with the ideas by themselves, it can be very normal and average for them, while their peers assess these ideas as innovative.
Limitations and suggestions for future research

While the research was conducted at the highest possible quality, some limitations must be considered.

Firstly, this research was conducted with a small sample size (N=71). Because of the voluntary basis of the research and large amount of time the participants had to invest, there were not a large group of employees willing to participate. However, there were relatively less drop-outs in the study (drop-out rate 19.7%). Reasons for the drop-outs included that participants had other obligations on the day of the workshop, the large amount of questionnaires, and the request to approach a direct colleague to participate in the research as well, and respondents (participant or colleague) left the organization. Future research needs to include a larger sample, preferably in different age categories and in different branches.

Secondly, the research design could be improved if the wait-list group became the control-group and received an intervention, with different content, at the same time. If this became the research design, it would easier to determine if the specific content of the workshop provokes the studied effects instead of just an intervention in general. With this research design it is possible that just the intervention, independent of the content, causes different results. Because the participants can feel the perceived attention and people are listening to them, it can influence their mental state. Future research is recommended to adapt the research design with an experimental group and a control group who take part in another kind of intervention.

Thirdly, the character of the research is longitudinal (two months). Therefore, it is sensitive to external factors. Possible external factors that may have influenced this research could be performance appraisals that took place in that same period, the surprising good results of the Dutch soccer team in the World Cup, and the upcoming holidays.

Fourthly, due to busy time schedules, complete randomization was not possible. The difference between the groups for pre-measured OCB and innovativeness was not significant so did not distort the study. In contrast, the difference for pre-measured PsyCap was significant between both groups. As already noted, this may have influenced the results of this research. It is recommended that future research include complete randomization. In this way the chance of significant difference between the two groups may be smaller.

Finally, the preparation exercise could have affected the results from the questionnaires. Some of the participants in the wait-list group received and completed the
preparation exercise before they filled in the second and last questionnaire. It is possible that they received a kind of intervention when, as the control group they were not to receive any. Future research should ensure that a possible preparation exercise is distributed at just the right time.

**Practical implications**

In addition to theoretical relevance, this research has practical implications for organizations and, in particular, human resource departments. The advantages of focusing on strengths have been put forward in earlier research. This study helps HR to understand how positive psychology can be put into practice through a brief strengths intervention. Because the intervention is short and simple to implement, it makes them attractive to organizations.

In addition, this research proved that employees who participate in a strengths intervention show more OCB according to their direct colleagues. So, even when employees don’t experience this change themselves, they positively contribute to the performance of the organization.
References


Harzer, C., & Ruch, W. (in press). The role of character strengths for task performance, job dedication, interpersonal facilitation, and organizational support. *Human Performance*


THE EFFECTS OF A STRENGTH-BASED INTERVENTION ON PSYCHOLOGICAL CAPITAL, ORGANIZATIONAL CITIZENSHIP BEHAVIOUR AND INNOVATIVENESS


