ISSN 1678-6971 • RAM. Rev. Adm. Mackenzie, São Paulo, *26*(2), eRAMG250078, 2025
Human and Social Management, https://doi.org/10.1590/1678-6971/eRAMG250078
Submitted: Apr. 3, 2023 | Approved: Apr. 22, 2024

Facing organizational crises: The importance of validating psychological capital scale using Angolan sample

Enfrentando as crises organizacionais: A importância da validação da escala de capital psicológico utilizando amostra angolana

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To cite this paper: Geremias, R. L., Lopes, M. P., & Soares, A. E. (2025). Facing organizational crises: The importance of validating psychological capital scale using Angolan sample. *Revista de Administração Mackenzie*, *26*(2), 1–27. https://doi.org/10.1590/1678-6971/eRAMG250078

RAM does not have information about open data regarding this manuscript.
RAM does not have permission from the authors or evaluators to publish this article's review.

Abstract

Purpose: The main goal of this study was to validate the Angolan version of the PCQ-24, using samples of employees who develop their work in adverse situations and need to deal daily with different constraints in their work environment.

Originality/value: Although several studies have confirmed the factorial validity of the psychological capital scale in different countries, this is a pioneering validation study of psychological capital in Angola, using two independent samples (sample 1 = 478 employees, and sample 2 = 200 employees).

Design/methodology/approach: The present study uses a quantitative methodology. Confirmatory factor analysis was used to test the five competing models reported in previous studies with cultures similar to Angola (e.g., Portugal and Brazil).

Findings: Contrary to previous findings in studies performed in countries with cultures similar to Angola, the results show that the 4-factor model had a better fit for the data. The discriminant validity of the psychological capital scale was confirmed by performing the correlation analysis with internal learning. Validation of the psychological capital scale in Angola may provide managers with tools to assess and develop the psychological capabilities of their employees. The validation of the psychological capital scale may contribute to the organizational assessment processes in an uncertain context.

Keywords: psychological capital, Psychological Capital Questionnaire (PCQ-24), Angolan sample, psychological capabilities, African context

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https://doi.org/10.1590/1678-6971/eRAMG250078

Resumo

Objetivo: O objetivo principal consistiu na validação da versão angolana do QCP-24, utilizando amostras de colaboradores que desenvolvem o seu trabalho em situações adversas e necessitam de lidar diariamente com diferentes constrangimentos no ambiente de trabalho.

Originalidade/valor: Apesar da validade fatorial da escala de capital psicológico em diferentes países, este é um estudo pioneiro de validação do capital psicológico em Angola, utilizando duas amostras independentes (amostra 1 = 478 trabalhadores, e amostra 2 = 200 trabalhadores).

Design/metodologia/abordagem: O presente estudo utiliza uma metodologia quantitativa. A análise fatorial confirmatória foi utilizada para testar os 5 modelos concorrentes relatados em estudos anteriores com culturas semelhantes à Angola (Exemplo: Portugal e Brasil).

Resultados: Contrariamente às conclusões anteriores de estudos em países com culturas semelhantes a Angola, os resultados mostraram que o modelo de 4-factores teve um melhor ajuste aos dados. A validade discriminante da escala de capital psicológico foi confirmada através da análise de correlação com a aprendizagem interna. A validação da escala de capital psicológico em Angola pode fornecer aos gestores ferramentas para avaliar e desenvolver as capacidades psicológicas dos seus colaboradores. Esta validação da escala pode contribuir para a avaliação de processos organizacionais em contextos incertos.

Palavras-chave: capital psicológico, Questionário de Capital Psicológico (QCP-24), amostra angolana, capacidades psicológicas, contexto africano

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INTRODUCTION

Organizational crises constitute a serious problem that must be addressed with the utmost urgency, as they affect the organization's efficiency and productivity (Simola, 2005; Hu et al., 2022). For Sørensen et al. (2022), searching for mechanisms to face organizational crises is a crucial process that might allow improving organizational processes, such as inter-organizational collaborations, to understand problems and reach solutions. Therefore, highly competitive environments and unpredictable organizational crises have attracted researchers' attention to mechanisms that may produce positive results (Liu, 2021).

Different studies in the positive organizational behavior field (POB) have shown that the positive psychological capital (PsyCap) as a second-order construct consists of self-efficacy, optimism, hope, and resilience, may help organizations face adverse situations (Van den Heuvel et al, 2013), and increase performance during exogenous crises (Grözinger et al., 2021). Positive psychological capital has been demonstrated to be a higher-order construct in different studies (Luthans et al, 2018; Geremias et al, 2020). The development of psychological capabilities allows a positive assessment of adverse circumstances and may increase the organizations' probability of success (HCY et al., 2022; Geremias et al, 2024). Therefore, validating the psychological capital scale is relevant for evaluating and developing the positive psychological state of employees (Antunes et al., 2017; Görgens-Ekermans & Herbert, 2013).

The validation of the psychological capital scale has been performed in different countries and cultures, including the United States (e.g., Luthans et al., 2007), France (e.g., Choisay et al., 2021), Portugal (e.g., Antunes et al., 2017), Brazil (e.g., Kamei et al., 2018), and China (e.g., Lu et al., 2023). However, in the African context, there are only reports of validation of the psychological capital scale in studies carried out in South Africa (e.g., Görgens-Ekermans & Herbert, 2013). For Luthans and Youssef-Morgan (2017), culture influences individual psychological capabilities. Therefore, employees from different countries may develop their psychological capabilities differently.

According to Antunes et al. (2017), the interest in validating the psychological capital scale allows a better understanding of the changes registered in the organizational field. It should not be limited to any specific geography. While broadly ignored in the literature, we argue that the Psychological Capital Questionnaire (PCQ-24) developed by Luthans et al. (2007) should also be validated to be applied in the Angolan context. Angola

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is a multicultural country with different challenges caused by turbulent historical circumstances, such as a long period of colonial war and the transition to a post-independence civil war with drastic consequences on the strength of organizations to face external competitiveness effectively (Cunha et al., 2016). These circumstances may be relevant for developing employees' psychological capabilities because they presuppose the organization's adaptation to a series of profound changes to improve its organizational processes, such as the definition of competitive strategies.

In response to the challenges mentioned above, a focus on developing employees' psychological capabilities is imperative. Organizations may increase their competitiveness, and employees tend to have greater job satisfaction and productivity since they work in better organizations that seek to contribute and be an asset to society (Cunha et al., 2013; Newman et al., 2017). Psychological capital has been positively correlated with desired behaviors at work, such as performance, satisfaction, innovation, and well-being. On the other hand, psychological capital contributes to reducing absenteeism and deviant behavior (Luthans & Youssef-Morgan, 2017; Dawkins et al., 2013). Therefore, employees need to develop psychological capabilities to face daily adversities.

Luthans et al. (2007) mentioned the continuous need to conduct studies on the validity of the psychological capital scale, thus supporting further studies to validate this scale. A study by Luthans and Youssef-Morgan (2017) also indicated the need for continuous validation of the psychological capital scale in different cultures. Our logic here is based on studies that mention the need to evaluate the psychological capital questionnaire in more countries to help the development of psychological capabilities in the organizational field.

This study aims to validate the Angolan version of the PCQ-24, using samples of employees who develop their work in adverse situations, dealing daily with different constraints in their work environment. We argue that the validation of the psychological capital scale may provide a relevant theoretical and practical contribution to the analysis of the relationship between psychological capital and the performance of Angolan employees and potentially to other similar cultures.

In the present study, we used two independent samples. In the first sample, we analyzed the internal consistency of the scale and its convergent validity. In the second sample, we examined the discriminant validity of the scale by linking psychological capital to internal learning. This variable was chosen because it is the only one related to psychological capital in a study

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with an Angolan undergraduate student sample performed by Geremias et al. (2020). This study differed from the previous psychological capital validation scale by testing and comparing the results of the five competing models highlighted in the literature with the results in countries with similar cultural factors.

The remainder of this paper is organized as follows. First, we present a literature review on the definitions of psychological capital and the measurement scales used in previous studies. Second, the methodological procedures used in data collection and processing are presented. Third, we present a discussion of the results, limitations, and suggestions for further studies. Finally, we outline the main implications of this study. The paper ends with some final remarks.

THEORETICAL BACKGROUND

Psychological capital

Different theoretical studies have presented positive psychological capital as an emerging core construct that can affect different positive outcomes in the organizational field, allowing employees to make a positive assessment of adverse circumstances and maintain the necessary effort to achieve success (Daswati et al., 2022; Luthans et al., 2010; Ali et al., 2021). Positive psychological capital was initially associated with specific psychological capabilities, such as self-efficacy, optimism, hope, and resilience, being widely studied as a second-order construct (Dawkins et al., 2013; Newman et al., 2017). These four psychological capabilities act synergistically, thus allowing an individual to permanently seek motivation and be able to face obstacles or adversity (Dawkins et al., 2018; Newman et al., 2014).

For Luthans et al. (2006), Psychological capital (PsyCap) integrates four positive psychological capabilities, namely: (1) self-efficacy, which refers to individual confidence in making the necessary effort to perform challenging tasks successfully; (2) optimism, related to the positive attributions that are made in the realization of future events; (3) hope, consists of perseverance to achieve goals and, when necessary, redirect the paths defined to achieve success; and (4) resilience, referring to the individual capability to recover from problems and adversities to achieve success.

These aforementioned psychological capabilities that make up psychological capital were the first to be included in the psychological capital framework because they meet the following requirements: 1) they can be

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measured, and they are based on theory; 2) they have a positive impact on different results in the organizational field; 3) it is state-like, and therefore, it is open to development (Antunes et al., 2017; Luthans et al., 2014). Therefore, psychological capital has been considered a construct that is open to change and development, unlike trait-like constructs such as the Big Five personality factors (Russo & Stoykova, 2015; Avey et al., 2011).

In a study on psychological capital profiles, Geremias et al. (2022) pointed out that the four psychological capabilities present better results than the other combinations of psychological capabilities. These findings prove that psychological capabilities are best represented by a higher-order construct called psychological capital. Additionally, different studies argue that PsyCap is not defined by a single dimension (e.g., simply self-efficacy) but rather by a shared range of the four psychological capabilities (Alessandri et al., 2018; Avey et al., 2011; Geremias et al., 2021). However, the variations presented in the different studies carried out on the validation of the psychological capital scale reinforce the need for further studies in different cultural contexts to analyze the adequacy of the scale.

The measures of psychological capital

Luthans et al. (2007) published a pioneering study in the validation of the psychological capital scale, which consisted of a self-report questionnaire with 24 items developed based on pre-existing measures of self-efficacy (Parker, 1998), hope (Snyder et al., 1996), optimism (Scheier & Carver, 1985), and resilience (Wagnild & Young, 1993). This pioneering study was run with a sample of 167 management students from a large state university in the Midwest, and the results demonstrated a measurable higher-order construct indicated by the dimensions of hope, optimism, self-efficacy, and resilience. Additionally, confirmatory factor analyses provided initial support for a 24-item PsyCap measure, and the comparison model showed that a second-order construct may represent the four PsyCap capabilities.

Another study by Harms and Luthans (2012) consisted of developing and validating the Implicit Psychological Capital measure using a sample of 278 employed from a wide variety of jobs and sectors who agreed to participate in university-sponsored research on the workplace. The results of this study demonstrated that the internal reliability of the Implicit-Psychological Capital Questionnaire (I-PCQ) was adequate, as well as proof of its convergent and discriminant validity. Other studies measuring the I-PCQ found moderate convergence between the I-PCQ and the original Psychological Capital Questionnaire measures (e.g., Harms et al., 2018).

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Luthans and Youssef-Morgan (2017) mentioned that other studies aiming to validate the psychological capital scale resorted to using a shorter version of the psychological capital scale with 12 items psychometrically derived from the 24-item psychological capital scale to measure each of the four psychological capabilities of the PsyCap (e.g., four items for hope, three items for effectiveness, three items for resilience and two items for optimism). However, measuring the 12-item version of psychological capital revealed variations between studies when applied in different cultures (Lu et al., 2023; Antunes et al., 2017; Görgens-Ekermans & Herbert, 2013).

The pioneering study validating the psychological capital scale in the African context was carried out in South Africa. That study used Cronbach's alpha coefficients and exploratory factor analysis to determine the reliability and validity of the Psychological Capital Questionnaire (Plessis & Barkhuizen, 2011). The principal component factor analysis results differed from the previous ones, which identified a four-factor construct. The results obtained in the study with the South African sample identified a three-factor construct for the psychological capital scale, considering that the participants perceived Hope and Self-Efficacy as the same construct. In that study, the three-factor structure showed acceptable internal consistency. Therefore, it was labeled Hopeful-Confidence, Optimism, and Resilience.

Another study by Görgens-Ekermans and Herbert (2013), with a sample of South African employees, reached results different from those of previous studies. Specifically, only hope, and self-efficacy met the 0.70 cut-off for acceptable reliability, showing Cronbach's alpha values greater than 0.70, which are 0.81 and 0.83, respectively. The remaining psychological capabilities, optimism, and resilience showed Cronbach's alpha values below 0.70. The differences found in the validation of the psychological capital scale in the two studies mentioned, using samples of South African employees, reinforce the continuous need for more studies that allow investigation of the instrument's portability in different contexts. The tricky results of these previous studies with African samples also lay the ground for the goal of the present study's relevance.

METHODS

Participants

Sample 1. This sample is made up of 478 employees from different organizations in Angola. These participants were recruited for convenience

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using a non-probabilistic sampling. The sample obtained was relatively heterogeneous, including public and private sector employees. Five hundred seventy questionnaires were distributed, and 478 valid responses were received, representing an acceptance rate of 84%. Of the entire sample, 54. 4% of the participants were men, and the age range varied from 18 to 58 (M = 24 years; SD = 5.9). Companies were 63.4 % from the commercial sector, 34.5% from public administration, and 2.1% from the banking sector. Regarding the years of service in the company, 37.9 % had 1 year of service, 19% had two years, and 43.1% had 3 years. Their average work experience was 2 years (SD = 0.9). Regarding work areas, 61.3% worked in the purchasing area, 20.7% in the sales area, 11.1% in customer service, and 6.9% were in the management area.

Sample 2. This sample is made up of 200 employees from different organizations in Angola. These participants were also recruited for convenience using a non-probabilistic sampling. The sample was relatively heterogeneous, including public and private sector employees. Three hundred eighty questionnaires were distributed, and 200 valid responses were received, representing an acceptance rate of 53%. According to Hair et al. (1995), 200 is the minimum sample size recommended for the structural equation modeling analysis with maximum likelihood estimation.

Of the entire sample, 61.5% of the participants were women, and the age range varied from 18 to 52 years (M = 25 years; SD = 5.7). Companies were 45.5% from the commercial sector, 49.5% from public administration, and 5% from the banking sector. Regarding the years of service in the company, 73.5% had 1 year of service, 18.5% had two years, and 8% had 3 years. Their average work experience was 1.3 years (SD = 0.6). Regarding working areas, 28% worked in the purchasing area, 45.5% in the sales area, 8% in customer service, and 18.5% were in the management area.

Measures

Psychological capital. We used the version of the 24-item questionnaire developed by Luthans et al. (2007). The scale is composed of four subscales with six items each, corresponding to positive psychological capabilities evaluating, respectively, self-efficacy (e.g., "I feel confident when I look for a solution to a long-term problem"); hope (e.g. "There are lots of ways around any problem concerning my work"); resilience (e.g. "I usually manage difficulties one way or another concerning my work"); and optimism (e.g. "At work, I am optimistic about what will happen in the future"). The responses were given on a six-point Likert scale, from (1) "Totally Disagree"

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to (6) "Totally Agree." The 24-item PsyCap scale presented in the original study has a Cronbach's αs of 0.89.

Internal learning. We used the adapted version scale validated by Bresman and Zellmer-Bruhn (2013). It is related to internal learning and has seven items. Examples of items: "Employees in this area seek and obtain all the information they need from other parts of the organization", and "In this area, there is always someone who ensures that we stop to reflect on the work process". The response scale used is a seven-point Likert type, from (1) "Totally Disagree" to (7) "Totally Agree". The internal learning scale presented in the original study has a Cronbach's αs of 0.71.

Procedures

The data collection procedure was the same as for the two study samples. First, we asked permission from the managers responsible for the areas where data collection was carried out. This consent was obtained by sending an authorization request letter. In this way, the participants of the two studies filled out the questionnaire in person and voluntarily, using the questionnaire on paper and a pencil. Participants in the first sample did not answer the internal learning scale, while participants in the second sample answered both questionnaires (psychological capital and internal learning). The data from the first sample were collected during February 2022, while the data from the second sample were collected during April 2022.

It is essential to highlight that the variables under study were measured at the individual level of analysis. Thus, for the internal learning variable, employees were asked to complete the questionnaire considering their work with the collaboration of other co-workers, as suggested and validated in previous studies (Lee et al., 2018; Geremias et al., 2020). To ensure confidentiality in the data collection process, the questionnaires were distributed in person, and all doubts that arose while filling out the questionnaire were clarified. Furthermore, all participants were informed that participation was voluntary and the data collected would be processed exclusively for the present study. On the other hand, we selected the organizations that reported financial difficulties to assess the employees' psychological capital in the context of the crisis.

Translation of the instruments

The scales used in this study were translated according to rules widely used and validated in empirical studies (e.g., Geremias et al., 2022). Initially,

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we asked two English teachers to translate the scales into Portuguese independently. Second, the two versions translated into Portuguese independently were compared. Third, after reaching a consensus on the items translated into Portuguese, we asked a third English teacher to back-translate the scale into English. Fourth, we asked the other English teacher to compare the back-translated version of the scales with the original scales. Fifth, the four English language teachers corrected the differences found in this process. Finally, we asked a bilingual professional to validate the final version of the questionnaire.

Data analysis

In the present study, data analysis took place in different steps. First, SPSS (v.27) was used to perform descriptive statistics of each item that makes up the psychological capital. Second, we performed the confirmatory factor analysis to examine the factor structure of the psychological capital scale, as suggested in previous studies (e.g., Antunes et al., 2017). Additionally, we tested the fit of other competing models that might explain the relationships between the Psychological Capital Questionnaire items mentioned in previous studies performed in the African context and other countries with cultural similarities with Angola (specifically, Portugal and Brazil).

The three-factor model (resilience, optimism, hope, and self-efficacy merged), mentioned in the study of psychological capital carried out in the African context by Plessis and Barkhuizen (2011), was tested. The second model tested consists of the 5-factor structure mentioned in the study carried out in the Portuguese context by Antunes et al. (2017). The second-order model was validated in the study performed in Brazil by Kamei et al. (2018). The present study also tested the 4-factor model incorporating the four psychological capabilities (hope, self-efficacy, optimism, and resilience) mentioned in previous studies (e.g., Antunes et al., 2017). Finally, a one-factor model was tested (in this model, the 24 items that make up the Psychological Capital Questionnaire were loaded into a single latent variable), as mentioned in previous studies (e.g., Kamei et al., 2018). To estimate each model, we used the maximum likelihood method suggested by Hair et al. (1995).

To assess the goodness of fit of the tested models, the indices Chi-Square ($\chi 2$): p-value $\leq$ 0,05; Goodness of Fit Index (GFI): $\geq$ 0.90; Comparative Fit Index (CFI): $\geq$ 0.90; Tucker-Lewis Index (TLI): $\geq$ 0.90; Root Mean Square Error of Approximation (RMSEA): $\leq$ 0.08; Standardized Root Mean Square Residual (SRMR): $\leq$ 0.08, were used as recommended

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by Hair et al. (1995). On the other hand, Cronbach's alpha coefficients were calculated using SPSS to assess the reliability of the psychological capital scale. We correlated the psychological capital construct with internal learning to assess discriminant validity.

Finally, it is important to note that we used two independent samples to perform the convergent and discriminant analysis instead of splitting a sample. This procedure was based on recommendations presented in the literature, such as the study by Lorenzo-Seva (2022), which highlights the importance of cross-validation provided by the independent samples. For Koul et al. (2018), splitting a sample can be considered an innocuous procedure. However, it can become highly complex, considering the aim is to use a single sample to obtain two equivalent subsamples. On the other hand, this study procedure was followed in the previous psychological capital validation scale (e.g., Antunes et al., 2017).

Assessing common method bias

In the data collection process of the second sample, the participants received two questionnaires. First, we administered the psychological capital questionnaire, and then the internal learning questionnaire was administered a week later. This procedure aims to minimize the potential standard method variance problem, as Antunes et al. (2017) suggested. Furthermore, other statistical remedies were adopted to mitigate the standard method variation (CMV) bias, as Podsakoff et al. (2003) recommended. The total variance explained by the standard method factor was 13.70%, below the 25% indicated by Williams and McGonagle (2015). These results suggest that common method bias is not a significant concern for the findings of this study.

RESULTS

Sample 1

Table 1 presents the results (sample 1) of the descriptive statistics of the version of the Psychological Capital Questionnaire applied in the Angolan context. It should be noted that hope was the psychological capability that presented the highest average values (specifically, item 8, "Currently, I try to achieve my goals with great energy").

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https://doi.org/10.1590/1678-6971/eRAMG250078

Table 1

Descriptive statistics of the psychological capital questionnaire (Sample 1)

Item	M	SD
Item 1	4.47	1.38
Item 2	4.19	1.44
Item 3	4.41	1.39
Item 4	5.03	1.11
Item 5	4.94	1.20
Item 6	5.11	1.00
Item 7	4.88	1.23
Item 8	5.49	.96
Item 9	5.40	.99
Item 10	4.11	1.23
Item 11	4.81	1.14
Item 12	4.26	1.56
Item 13	3.11	1.66
Item 14	4.57	1.23
Item 15	4.15	1.57
Item 16	3.92	1.46
Item 17	5.02	1.17
Item 18	4.12	1.43
Item 19	4.49	1.50
Item 20	3.32	1.59
Item 21	5.29	1.07
Item 22	5.20	1.10
Item 23	3.77	1.57
Item 24	4.95	1.17

Note. N = 478; M: Mean; SD: Standard deviation.

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Reliability

We run an internal consistency analysis by calculating the Cronbach's alpha coefficient. Cronbach's alpha values for each of the psychological capital subscales were as follows: self-efficacy (0.72), optimism (0.68), hope (0.67), and resilience (0.62). The Cronbach alpha for the overall psychological capital scale was 0.73. The internal consistency values presented for the optimism, hope, and resilience scales are below the acceptance levels (0.7) Hair et al. (2014) recommended. However, these reliability problems in validation studies of the psychological capital scale have already been identified and reported by other authors in previous studies (e.g., Dawkins et al., 2013; Luthans et al., 2007; Görgens-Ekermans & Herbert, 2013).

Confirmatory factor analysis

Table 2 presents the confirmatory factor analysis results performed with sample 1. The model presents moderate and good factorial weights ($\lambda \geq 0.30$) and adequate individual reliabilities ($r2 \geq 0.10$). In general, the results of the factorial analysis showed acceptable fit indices, as suggested by Hair et al. (2014).

Table 2

Confirmatory factorial analysis results (sample 1)

Study variables	χ^2	χ^2/ *df*	*ρ*	*TLI*	*CFI*	*GFI*	*SRMR*	*RMSEA*
Self-Efficacy	26.129	3.266	<0.001	.901	.936	.983	.044	.069
Hope	10.373	1.297	<0.001	.981	.990	.993	.036	.025
Optimism	23.901	3.414	<0.001	.902	.925	.984	.036	.071
Resilience	21.003	2.334	<0.001	.903	.942	.902	.052	.053

Note. N = 480: χ^2 = Chi-Square; p-value ≤ 0,01; Df = Degrees of freedom; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Model comparisons

Table 3 presents the confirmatory factor analysis results of the models selected according to the African context and cultural similarities with Angola. These results showed that the four-factor model (model 4) is the one that best fits the data, while the one-factor model (model 5) was the one that presented the lowest model fit indices. The comparison between the

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https://doi.org/10.1590/1678-6971/eRAMG250078

four-factor model and the one-factor model, using a χ^2 difference test, showed a significant change since $\Delta\chi^2(7) = 269.749$, a value exceedingly above the chi-square distribution for $\alpha = 0.05$ ($\chi^2(7) = 14.067$), reasoning that the four-factor model provided a better fit to the data.

Table 3

Results of goodness-of-fit statistics for factorial validity tests of the psychological capital questionnaire—sample 1

Models	χ^2	χ^2/ *df*	*p*	*TLI*	*CFI*	*GFI*	*SRMR*	*RMSEA*
Model 1 (3 factors -Hope and Self-Efficacy merged; Optimism; Resilience)	570.821	2.292	<0.001	.748	.773	.904	.064	.052
Model 2 (5 factors -Self-Efficacy, Optimism, Hope-Willpower, Hope-Waypower, and Resilience)	437.859	1.817	<0.001	.841	.861	.927	.052	.041
Model 3 (Second-order factor model-overall PsyCap)	462.447	1.872	<0.001	.830	.848	.923	.056	.042
Model 4 (4 factors -Self-Efficacy, Optimism, Hope, Resilience)	447.662	1.827	<0.001	.939	.957	.926	.043	.042
Model 5 (One-factor model)	717.411	2.847	<0.001	.640	.671	.878	.064	.062

Table 3 shows the results of the confirmatory factor analysis of the second-order model (model 3), which did not reach an adequate fit for all indices (TLI = .830; CFI = .848), following Hair et al. (2014) guidelines. Despite these results, we compared the four-factor model (Model 4) and the second-order model (Model 3). The results obtained using a χ^2 difference test showed remarkable changes since $\Delta\chi^2(2) = 14.785$, a value above the chi-square distribution for $\alpha = 0.05$ ($\chi^2(2) = 5.991$), suggesting that the four-factor model provided a better fit to the data.

The comparison of the four-factor model (model 4) with the five-factor model (model 2), using a χ^2 difference test, was $\Delta\chi^2(4) = 9.803$, a value slightly above the chi-square distribution for $\alpha = 0.05$ ($\chi^2(4) = 9.488$), indicating that the four-factor model provided a better fit to the data. Furthermore, we performed a comparison between the four-factor model (model 4) and the three-factor model (model 1) using a χ^2 difference test. The result was $\Delta\chi^2(4) = 123.159$, a value significantly above the chi-square distribution for $\alpha = 0.05$ ($\chi^2(4) = 9.488$), suggesting that the four-factor model provided a better fit to the data. Therefore, the data presented above suggest that the four-factor model is the one that presented a better fit to the data ($\chi^2(245)$

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= 447.662; ρ <0.001; *TLI* = .939; *CFI* =.957; GFI = .926; *SRMR* = .043; *RMSEA* = .042).

Convergent validity

To confirm the convergent validity of the psychological capital subscales, we calculated the Average Variance Extracted (AVE), as recommended by Hair et al. (2014). Therefore, the results demonstrated adequate convergent validity for self-efficacy (0.54) and optimism (0.53), according to the criterion of Average Variance Extracted (AVE) greater than 0.5. The hope and resilience subscales did not show adequate Average Variance Extracted (AVE), 0.43 and 0.47, respectively. Additionally, the Composite Reliability of the psychological capital subscales was performed, as suggested by Hair et al. (1998). The results showed adequate Composite Reliability for self-efficacy (0.90), optimism (0.89), and hope (0.73). However, we found that the resilience subscale was the only one to present a Composite Reliability of 0.67, below the cut-off value of 0.70, recommended by Hair et al. (2014).

Sample 2

Discriminant validity

Correlations were performed between the subscales of psychological capital and internal learning to assess discriminant validity (Table 4).

Table 4

Means, standard deviations, and correlations between all study variables (sample 2)

Study variables	M	SD	1	2	3	4	5	6
1. Psychological Capital	4.82	1.11	(0.73)					
2. Self-Efficacy	4.66	.76	.621**	(0.71)				
3. Hope	4.87	.69	.721**	.415**	(0.68)			
4. Optimism	4.67	.74	.614**	.071	.166*	(0.63)		
5. Resilience	4.17	.76	.740**	.172*	.398**	.414**	(0.64)	
6. Internal Learning	4.59	.50	.139*	.166*	.181*	-.025	.057	(0.85)

N = 200. Cronbach's αs (in parentheses).

* The correlation is significant at the 0.05 level (2-tailed).

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

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The presented results (table 4) revealed moderate correlations between internal learning and the two psychological capital subscales (self-efficacy and hope). Considering that the correlations found between the psychological capital subscales and internal learning were lower than 0.55, it can be stated that the psychological capital scale has discriminant validity, as suggested by Rönkkö and Cho (2020). According to Gefen and Straub (2005), discriminant validity is demonstrated when the relationship between different constructs is weak, except for those constructs that may be theoretically associated. For Henseler et al. (2014), the weak correlation between two constructs may support discriminant validity.

Analysis of the psychological capital scale invariance

To verify the stability of the psychological capital scale, a multigroup analysis was run using the gender of the two samples under study, namely, sample 1 (male = 260 and female = 218) and sample 2 (male = 77 and female = 123). Therefore, the null hypothesis (H0) for the invariance of the structural relationships between two samples assumes that no differences should be found between the models under analysis. Otherwise, it means the rejection of the null hypothesis (H0) and accepting the alternative hypothesis (H1). That is, the acceptance of the alternative hypothesis means that the stability of the structural relationships was not confirmed because the two samples present models with significant differences.

A comparison was made between the multigroup model with the gender variable in sample 1(n = 478) and the multigroup model with the gender variable in sample 2 (n = 200). The results obtained by the χ^2 difference test did not show notable changes, as $\Delta\chi^2(24) = 4.919$, a value far below the chi-square distribution for $\alpha = 0.05$ ($\chi^2(24) = 36.415$), suggesting that the null hypothesis (H0) should be accepted. The elements described above provided strong support for the invariance of the measurement of psychological capital using a sample of Angolan employees.

Discussion

The main goal of the present study was to validate the Angolan version of the PCQ-24, using samples of employees who develop their work in adverse situations, having to deal daily with different constraints in their work environment. On the other hand, this study allowed the debate on the psychometric validity of the psychological capital scale to be relaunched.

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This study is in line with the call presented by Luthans and Youssef-Morgan (2017), which consisted of the continuous need to analyze the applicability of the psychological capital scale in different cultures, considering that the four psychological capabilities that make up psychological capital may have different or even contradictory meanings in certain countries. Therefore, we highlight the main results of this study.

The results of this study showed through the calculation of Cronbach's alpha that the internal consistency of the psychological capital scale was adequate only for the self-efficacy subscale (0.72), and the remaining subscales presented a cut-off value below 0.70, specifically, optimism (0.68), hope (0.67) and resilience (0.62). These Cronbach's alpha values below 0.7 have already been reported in previous studies that also examined the internal consistency reliability of the psychological capital scale (Luthans & Youssef-Morgan, 2017). Therefore, the psychological capital subscales' reliabilities below 0.7 were presented in different studies. Specifically, optimism = 0.65 (e.g., Avey et al., 2006); resilience = 0.68 (e.g., Luthans et al., 2008); and hope = 0.63 (e.g., DiGasbarro et al., 2019). According to Dawkins et al. (2013), the reverse-scored items that make up the psychological capital scale may be one of the reasons that reduce scale reliability.

The item-total correlation values varied between 0.61 and 0.74, demonstrating the adequacy of the Psychological Capital Questionnaire items. Optimism was the psychological capability that showed the lowest correlation with psychological capital. This result aligns with the study performed in the African context by Görgens-Ekermans and Herbert (2013). This finding seems to happen because although optimism has been explored as a construct that contributes positively to achieving different results, there is little evidence of its results in crisis contexts (Monehin & Diers-Lawson, 2022). However, the possibility of reformulating the optimism scale items for future use in the African context should be analyzed and tested in further studies.

The results of the confirmatory factor analysis run based on five competing models showed that the 4-factor model (self-efficacy, optimism, hope, resilience) was the one that presented a better fit for the data. The presented results differ from previous studies that point to the second-order factor as the best conceptualization of the factorial structure of the psychological capital scale (Luthans & Youssef-Morgan, 2017). However, this result seems to corroborate the findings presented by Antunes et al. (2017), where the authors mention that a set of interrelated psychological capabilities may better represent the conceptualization of the factorial structure of the Psychological Capital Questionnaire.

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We calculated the Average Variance Extracted (AVE) to verify the convergent validity of the psychological capital scale. The results revealed convergent validity only for the subscale of self-efficacy and optimism. However, previous studies also reported problems related to the convergent validity of some psychological capital subscales (e.g., Dawkins et al., 2013; Antunes et al., 2017). On the other hand, the discriminant validity analysis seems to suggest a correlation between the four psychological capabilities and internal learning, as mentioned in previous studies (e.g., Geremias et al., 2021).

The results of this study seem to demonstrate the invariance of the psychological capital scale between men and women. Primarily, despite the Angolan culture being dominated by men in prominent positions (Cunha et al., 2016), women attributed the same meaning to the items of the psychological capital scale as men. The invariance of the psychological capital scale verified between men and women confirms the results presented in previous psychological capital validation studies (Choisay et al., 2021; Platania & Paolillo, 2022).

Limitations and Future Directions

The present study has some limitations. Participants in this study are mainly from the southern region of Angola and were recruited for convenience. This fact may have implications for generalizing the results to other areas of Angola. Therefore, future studies may consider collecting data in all regions of the country.

Another limitation is related to the potential problem of common method bias since we used the same source for data collection, despite the results showing that the common method bias cannot be considered a threat to the results of this study due to the use of certain "remedies," such as the addition of the latent factor method and the separate application of the psychological capital and internal learning questionnaire. Therefore, future research may alleviate the potential problem of common method bias by conducting data collection using multiple sources.

Finally, a more detailed analysis of the composition and contribution of each first-order factor can help explain the findings of this study, for example, the fact that the second-order model did not present a good fit to the data. This perspective is supported by previous studies that relaunch the debate for including additional constructs in the psychological capital framework, such as gratitude, forgiveness, and well-being (Nolzen, 2018).

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Theoretical and practical implications

This study contributes to the literature in several ways. Our study provided additional evidence for the validity of the Portuguese language version of the Psychological Capital scale applied in previous studies (e.g., Kamei et al., 2018; Antunes et al., 2017). Additionally, this is a pioneering validation study of the psychological capital scale using a sample of Angolan employees. This study provided evidence that employees in different countries may have various developments in their psychological capabilities despite cultural similarities.

Considering the validation studies of the psychological capital scale carried out in countries with cultures similar to Angola, such as Portugal and Brazil. This study differs from previous studies in that it tested the existing differences between the five competing models reported in studies conducted in different countries. Additionally, this validation study of the psychological capital scale was carried out with employees of companies that reported financial problems. Therefore, data collection in uncertain environments has not, as far as we know, been adopted in any previous study.

Another implication is related to analyzing the discriminant validity of the psychological capital scale. The current study tested the correlation between the psychological capital subscales and internal learning. This result seems to reinforce the relationship between psychological capital and internal learning reported in a study carried out in Angola with undergraduate students (Geremias et al., 2020).

The present study provides evidence of the convergent and discriminant validity of the Angolan version of the Psychological Capital Questionnaire using two independent samples. In this way, the present study differs from other psychological capital scale validation studies carried out in the African context (e.g., Görgens-Ekermans & Herbert, 2013), which performed the convergent and discriminant validity of the psychological capital scale using a single sample.

Finally, the descriptive statistics of the Angolan psychological capital questionnaire demonstrated that hope was the psychological capability that presented the highest average values. This result is relevant as it highlights the need for managers in the Angolan context to pay special attention to hope in the psychological capabilities development training programs.

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CONCLUSIONS

The main goal of this study was to validate the Angolan version of the PCQ-24. This study provided evidence of the validity of the psychological capital scale using a sample of Angolan employees who work in an uncertain environment. The results seem to confirm the applicability of the psychological capital scale in different contexts. On the other hand, the results of this study support the use of the 4-factor model, contrary to the evidence presented by Luthans et al. (2007), which reinforces the use of the second-order model. According to Antunes et al. (2017), the psychological capital validation scale in different countries is relevant to improving the understanding of reported changes in the organizational field.

The validation of the psychological capital scale may positively impact the understanding of organizational challenges, considering that psychological capital has been related to the definition of effective organizational strategies (Grözinger et al., 2021). Thus, we argue that the present study is important because it presents an instrument that organizational managers may use to improve and develop the psychological capabilities of their employees. According to Luthans et al. (2007), psychological capital is a construction of states that may be developed through intentional interventions. Personal growth interventions will likely enhance psychological capital because they lead to mastery of experiences due to the learning process.

REFERENCES

Alessandri, G., Consiglio, C., Luthans, F., & Borgogni, L. (2018). Testing a dynamic model of the impact of psychological capital on work engagement and job performance. *Career Development International, 23*(1), 33–47. https://doi.org/10.1108/cdi-11-2016-0210

Ali, I., Khan, M. M., Shakeel, S., & Mujtaba, B. G. (2021). Impact of psychological capital on performance of public hospital nurses: The mediated role of job embeddedness. *Public Organization Review, 22*, 135–154. https://doi.org/10.1007/s11115-021-00521-9

Antunes, A. C., Caetano, A., & Pina e Cunha, M. (2017). Reliability and construct validity of the Portuguese version of the psychological capital questionnaire. *Psychological Reports, 120*(3), 520–536. https://doi.org/10.1177/0033294116686742

Avey, J. B., Patera, J. L., & West, B. J. (2006). The implications of positive psychological capital on employee absenteeism. *Journal of Leadership & Organizational Studies, 13*(2), 42–60. https://doi.org/10.1177/10717919070130020401

Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly, 22*(2), 127–152. https://doi.org/10.1002/hrdq.20070

Choisay, F., Fouquereau, E., Coillot, H., & Chevalier, S. (2021). Validation of the French Psychological Capital Questionnaire (F-PCQ-24) and its measurement invariance using bifactor exploratory structural equation modeling framework. *Military Psychology, 33*(1), 50–65. https://doi.org/10.1080/08995605.2020.1852873

Cunha, M. P., Fortes, A., Gomes, E., Rego, A., & Rodrigues, F. (2016). Ambidextrous leadership, paradox, and contingency: Evidence from Angola. *The International Journal of Human Resource Management, 30*, 702–727. https://doi.org/10.1080/09585192.2016.1201125

Cunha, M. P., Rego, A., & Lopes, M. (2013). Comportamento Organizacional Positivo. *Análise Psicológica, 4*(XXXI), 375–390. http://doi.org/10.14417/ap.804

Daswati, D., Wirawan, H., Hattab, S., Salam, R., & Iskandar, A. S. (2022). The effect of psychological capital on performance through the role of career engagement: Evidence from Indonesian public organizations. *Cogent Social Sciences, 8*, 1–19. https://doi.org/10.1080/23311886.2021.2012971

Dawkins, S., Martin, A., Scott, J., & Sanderson, K. (2013). Building on the positives: A psychometric review and critical analysis of the construct of Psychological Capital. *Journal of Occupational and Organizational Psychology, 86*(3), 348–370. https://doi.org/10.1111/joop.12007

Dawkins, S., Martin, A., Scott, J., Sanderson, K., & Schüz, B. (2018). A cross-level model of team-level psychological capital (PsyCap) and individual- and team-level outcomes. *Journal of Management & Organization, 27*(2), 1–20. https://doi.org/10.1017/jmo.2018.27

DiGasbarro, D., Midden, A., Van Haitsma, K., Meeks, S., & Mast, B. (2019). Reliability and validity of the adult hope scale among nursing home residents with and without cognitive impairment. *Clinical Gerontologist, 43*(3), 1–10. https://doi.org/10.1080/07317115.2019.1656696

ISSN 1678-6971 • RAM. Rev. Adm. Mackenzie, São Paulo, *26*(2), eRAMG250078, 2025
https://doi.org/10.1590/1678-6971/eRAMG250078

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems, 16*(5), 90–109. https://doi.org/10.17705/1cais.01605

Geremias, R. L., Lopes, M. P., & Soares, A. E. (2020). Enhancing internal learning in teams: The role of network centrality and psychological capital of undergraduate students. *Frontiers in Psychology, 11*, 1–10. https://doi.org/10.3389/fpsyg.2020.02197

Geremias, R. L., Lopes, M. P., & Soares, A. E. (2021). The influence of psychological capital on internal learning in teams: The mediating role of the perceived team structure. *Revista de Administração de Empresas, 61*(4), 1–15. https://doi.org/10.1590/S0034-759020210405

Geremias, R., Lopes, M. P., & Soares, A. (2022). Psychological capital profiles and their relationship with internal learning in teams of undergraduate students. *Frontiers in Psychology, 13*, 1–13. https://doi.org/10.3389/fpsyg.2022.776839

Geremias, R., Lopes, M., & Sotomayor, A. (2024). Improving organizational commitment among healthcare employees in Angola: The role of psychological capital and perceived transformational leadership. *Healthcare, 12*, 326. https://doi.org/10.3390/healthcare12030326

Görgens-Ekermans, G., & Herbert, M. (2013). Psychological capital: Internal and external validity of the Psychological Capital Questionnaire (PCQ-24) on a South African sample. *Journal of Industrial Psychology, 39*(2), 1–12. https://doi.org/10.4102/sajip.v39i2.1131

Grözinger, A.-C., Wolff, S., Ruf, P. J., & Moog, P. (2021). The power of shared positivity: Organizational psychological capital and firm performance during exogenous crises. *Small Business Economics, 58*(2), 689–716. https://doi.org/10.1007/s11187-021-00506-4

Hair, J. F., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis*. Pearson.

Hair, J., Anderson, R., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis*. Prentice Hall.

Harms, P. D., & Luthans, F. (2012). Measuring implicit psychological constructs in organizational behavior: An example using psychological capital. *Journal of Organizational Behavior, 33*(4), 589–594. https://doi.org/10.1002/job.1785

Harms, P. D., Krasikova, D. V., & Luthans, F. (2018). Not me, but reflects me: Validating a simple implicit measure of psychological capital. *Journal of Personality Assessment, 100*(5), 551–562. https://doi.org/10.1080/00223891.2018.1480489

HCY., H., Chui, O., & Chan, Y. C. (2022). When pandemic interferes with work: Psychological capital and mental health of social workers during COVID-19. *Social Work, 67*(4), 311–320. https://doi.org/10.1093/sw/swac035

Henseler, J., Ringle, C. M., & Sarstedt, M. (2014). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hu, C., Yun, K. H., Su, Z., & Xi, C. (2022). Effective crisis management during adversity: Organizing resilience capabilities of firms and sustainable performance during COVID-19. *Sustainability, 14*, 1–20. https://doi.org/10.3390/su142013664

Kamei, H., Ferreira, M. C., Valentini, F., Peres, M. F., Kamei, P. T., & Damásio, B. F. (2018). Psychological Capital Questionnaire—Short Version (PCQ-12): Evidence of validity of the Brazilian version. *Psico-USF, 23*(2), 203–214. https://doi.org/10.1590/1413-82712018230202

Koul, A., Becchio, C., & Cavallo, A. (2018). Cross-validation approaches for replicability in Psychology. *Frontiers in Psychology, 9*, 1–4. https://doi.org/10.3389/fpsyg.2018.01117

Lee, S., Kwon, S., Shin, S. J., Kim, M., & Park, I. -J. (2018). How team-level and individual-level conflict influences team commitment: A multilevel investigation. *Frontiers in Psychology, 8*, 1–13. https://doi.org/10.3389/fpsyg.2017.02365

Liu, J. (2021). Linking psychological capital and behavioral support for change: The roles of openness to change and climate for innovation. *Frontiers in Psychology, 12*, 1–8. https://doi.org/10.3389/fpsyg.2021.612149

Lorenzo-Seva, U. (2022). SOLOMON: A method for splitting a sample into equivalent subsamples in factor analysis. *Behavior Research Methods, 54*, 2665–2677. https://doi.org/10.3758/s13428-021-01750-y

Lu, X., Wang, L., Xu, G., Teng, H., Li, J., & Guo, Y. (2023). Development and initial validation of the psychological capital scale for nurses in Chinese local context. *BMC Nursing, 22*. https://doi.org/10.1186/s12912-022-01148-x

ISSN 1678-6971 • RAM. Rev. Adm. Mackenzie, São Paulo, *26*(2), eRAMG250078, 2025
https://doi.org/10.1590/1678-6971/eRAMG250078

Luthans, B. C., Luthans, K. W., & Avey, J. B. (2014). Building the leaders of tomorrow: The development of academic psychological capital. *Journal of Leadership & Organizational Studies, 21*(2), 191–199. https://doi.org/10.1177/1548051813517003

Luthans, F., & Youssef-Morgan, C. M. (2017). Psychological Capital: An evidence-based positive approach. *Annual Review of Organizational Psychology and Organizational Behavior, 4*(1), 339–366. https://doi.org/10.1146/annurev-orgpsych-032516-113324

Luthans, F., Avey, J. B., Avolio, B. J., & Peterson, S. J. (2010). The development and resulting performance impact of positive psychological capital. *Human Resource Development Quarterly, 21*(1), 41–67. https://doi.org/10.1002/hrdq.20034

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: Toward a micro-intervention. *Journal of Organizational Behavior, 27*, 387–393. https://doi.org/10.1002/job.373

Luthans, F., Avey, J. B., Clapp-Smith, R., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *The International Journal of Human Resource Management, 19*(5), 818–827. https://doi.org/10.1080/09585190080199119

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: measurement and relationship with performance and satisfaction. *Personnel Psychology, 60*, 541–572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Luthans, K. W., Luthans, B. C., & Chaffin, D. (2018). Refining grit in academic performance: The mediational role of psychological capital. *Journal of Management Education, 43*, 35–61. https://doi.org/10.1177/1052562918804282

Monehin, D., & Diers-Lawson, A. (2022). Pragmatic optimism, crisis leadership, and contingency theory: A view from the C-suite. *Public Relations Review, 48*(4), 102224. https://doi.org/10.1016/j.pubrev.2022.102224

Newman, A., Nielsen, I., Smyth, R., & Hirst, G. (2017). Mediating role of psychological capital in the relationship between social support and well-being of refugees. *International Migration, 56*(2), 117–132. https://doi.org/10.1111/imig.12415

Newman, A., Ucbasaran, D., Zhu, F., & Hirst, G. (2014). Psychological capital: A review and synthesis. *Journal of Organizational Behavior, 35*(S1), S120–S138. https://doi.org/10.1002/job.1916

Nolzen, N. (2018). The concept of psychological capital: A comprehensive review. *Management Review Quarterly, 68*(3), 237–277. https://doi.org/10.1007/s11301-018-0138-6

Parker, S. K. (1998). Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology, 83*(6), 835–852. https://doi.org/10.1037/0021-9010.83.6.835

Platania, S., & Paolillo, A. (2022). Validation and measurement invariance of the Compound PsyCap Scale (CPC-12): A short universal measure of psychological capital. *Anales de Psicología / Annals of Psychology, 38*(1), 63–75. https://doi.org/10.6018/analesps.449651

Plessis, Y. D., & Barkhuizen, N. (2011). Psychological capital, a requisite for organisational performance in South Africa. *South African Journal of Economic and Management Sciences, 15*(1), 16–30. https://doi.org/10.4102/sajems.v15i1.122

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5

Rönkkö, M., & Cho, E. (2020). An updated guideline for assessing discriminant validity. *Organizational Research Methods, 20*(10), 1–42. https://doi.org/10.1177/1094428120968614

Russo, S. D., & Stoykova, P. (2015). Psychological Capital Intervention (PCI): A replication and extension. *Human Resource Development Quarterly, 26*(3), 329–347. https://doi.org/10.1002/hrdq.21212

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*(3), 219–247. https://doi.org/10.1037/0278-6133.4.3.219

Simola, S. K. (2005). Organizational crisis management: Overview and opportunities. *Consulting Psychology Journal: Practice and Research, 57*(3), 180–192. https://doi.org/10.1037/1065-9293.57.3.180

Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology, 70*(2), 321–335. https://doi.org/10.1037//0022-3514.70.2.321

Sørensen, J. L., Ranse, J., Gray, L., Khorram-Manesh, A., Goniewicz, K., & Hertelendy, A. J. (2022). Employees perception of organizational crises and their reactions to them: A Norwegian organizational case study. *Frontiers in Psychology, 13*, 1–10. https://doi.org/10.3389/fpsyg.2022.8184

ISSN 1678-6971 • RAM. Rev. Adm. Mackenzie, São Paulo, *26*(2), eRAMG250078, 2025
https://doi.org/10.1590/1678-6971/eRAMG250078

Van den Heuvel, M., Demerouti, E., & Bakker, A. B. (2013). How psychological resources facilitate adaptation to organizational change. *European Journal of Work and Organizational Psychology, 23*(6), 847–858. https://doi.org/10.1080/1359432x.2013.817057

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resiliency scale. *Journal of Nursing Management, 1*(2), 165–178.

Williams, L. J., & McGonagle, A. K. (2015). Four research designs and a comprehensive analysis strategy for investigating common method variance with self-report measures using latent variables. *Journal of Business and Psychology, 3*(3), 339–359. https://doi.org/10.1007/s10869-015-9422-9