2024, Vol. 24, No. 2
ISSN 1667-4545
Recuperado de https://revistas.unc.edu.ar/index.php/revaluar

Laboratorio de Evaluación Psicológica y Educativa
Facultad de Psicología - Universidad Nacional de Córdoba

Creativity in the Workplace: Psychometric Properties of the CPPC-17 Scale

Creatividad en el Trabajo: Propiedades Psicométricas de la Escala CPPC-17

Ramón Rodríguez Montalbán [1] , Adam Rosario Rodríguez [2] , Sofía Rodríguez Santiago [3] , William Figueroa Romero [2] , Thaymis Báez-Luciano [3] , Yarí Marini Santiago [4] , Yamirca Carrión [4] , Aileen Dávila Rodríguez [4] , Obed Santiago [4] , Cristina Quiñones [4] , Mariana Figueroa [4] , Carla Harrison [4]

1 - University of Puerto Rico, Cayey.
2 - Albizu University, San Juan Campus.
3 - University of Puerto Rico, Río Piedras Campus.
4 - Albizu University Mayagüez, University Center.

Recibido: 20/12/2023 **Revisado:** 01/03/2024 **Aceptado:** 12/07/2024

Abstract

This study aims to analyze the psychometric properties of the Creative Potential and Creative Practice (CPPC-17) scale. A heterogeneous sample of 1021 workers from different workplaces in Puerto Rico was used to meet this objective. This study used a quantitative method with an instrumental design. The findings reveal that the CPPC-17 scale has construct validity with a factorial structure of three dimensions with Cronbach's alpha values that fluctuated between .91 and .96. In conclusion, the CPPC-17 scale turned out to be a robust instrument to measure Organizational Creativity, along with these three factors: creative potential, creative practice, and organizational support, in the workplace in Puerto Rico.

Keywords: *creative potential, creative practice, organizational support*

Resumen

El propósito de esta investigación es analizar las propiedades psicométricas de la Escala de Potencial Creativo y Práctica Creativa (CPPC-17). Para cumplir con este objetivo, se utilizó una muestra heterogénea de 1021 personas trabajadoras de distintos sectores laborales de Puerto Rico. Este estudio empleó un método cuantitativo, con un diseño instrumental. Los hallazgos revelan que la escala CPPC-17 posee validez de constructo con una estructura factorial de tres dimensiones, con índices alfa de Cronbach que fluctuaron entre .91 y .96. En conclusión, la escala CPPC-17 resultó ser un instrumento de medición robusto para medir la creatividad organizacional junto a sus tres factores: potencial creativo, práctica creativa y apoyo organizacional, en el contexto laboral de Puerto Rico.

Palabras clave: *potencial creativo, práctica creativa, apoyo organizacional*

***Correspondence to:** Dr. Ramón Rodríguez Montalbán, Assistant Professor in the Department of Social Sciences at the University of Puerto Rico at Cayey. E-mail address: ramon.rodriguez14@upr.edu.

How to cite: Montalbán, R., R., Rodríguez, R., A., Rodríguez Santiago, S., Figueroa Romero, W., Báez-Luciano, T., Carrión Y., Davila Rodríguez, A., Santiago, O., Quiñones, C., Figueroa, M., Harrison, C.,(2024): Creativity in the Workplace: Psychometric Properties of the CPPC-17 Scale. *Revista Evaluar, 24*(2), 76-88. Retrieved from https://revistas.unc.edu.ar/index.php/revaluar

Participaron en la edición de este artículo: Gloria Nieve, Vanesa Toledo, Pablo Carpintero, Florencia Ruiz, Jorge Bruera, Benjamín Casanova.

Introduction

> "*The creative adult is the child who survived*", Ursula Leguin

Human beings are constantly searching for new ways of doing, innovating, and evolving in multiple facets of life. The work context is no stranger to the concept of creativity. DiLiello and Houghton (2008) state that the value of organizational creativity is related to novel ideas to increase organizational efficiency, solve complex problems, and improve effectiveness. Recent studies show that creativity in organizations is generated and fostered by both individual and organizational variables. As background, organizational creativity is related to intrinsic factors, engagement, leadership styles, group support, and emotional intelligence, among other variables (Amabile, 1998; da Costa et al., 2015; Cavaliere et al., 2015; Luu et al., 2019; Mubarak & Noor, 2018; Ramos et al., 2018). Consequently, organizational creativity is associated with employee well-being, innovation, success, and competitiveness of firms, among others (Anderson et al., 2014; Helzer & Kim, 2019; Gu et al., 2015).

Due to the scarcity of literature on work-related creativity in the Puerto Rican organizational context, it would be necessary to apply DiLiello and Houghton's (2008) model to the Puerto Rican work environment. At the same time, although the importance of creativity at the organizational level is well-known from various research studies, other research must focus on its significance at the individual level. As a consequence of the constant social changes and new organizational demands, it has been essential for organizations to employ new ways of fostering creativity to adapt to the new realities. Therefore, it is necessary to analyze the psychometric properties of the creativity scale in the working environment in Puerto Rico to foster creative ideas that help organizations adapt to the needs of a changing world.

Given the above, we ask ourselves the following questions: *How does creativity manifest itself in the Puerto Rican work context? How can work creativity be measured? What are the psychometric properties of DiLiello and Houghton's (2008) work creativity scale?*

To answer these questions, we explore the Theoretical Model of Creativity (DiLiello & Houghton, 2008) based on how individuals develop new ideas and practical skills and how they use their creative abilities in the company (Boada-Grau et al., 2014). This model also points out that individuals with strong and creative potential are more likely to practice creativity when they feel support from the organization (DiLiello & Houghton, 2008). We tested this model along with its three dimensions (creative potential, creative practice, and organizational support) to explore whether it can be used in the Puerto Rican work context. Finally, this study shows that organizational creativity in human behavior allows one to perform different work tasks dynamically and innovatively.

Creativity in the Workplace

According to Falco (2016), Georges de Mestral was an electrical engineer who enjoyed walking his dog in the countryside and noticed that Arctium seeds were constantly sticking to his clothes and his dog's fur. This fact contributed to de Mestral founding his own company and patenting Velcro in 1951 (Falco, 2016). Consequently, this author suggests that Velcro was an idea born in a context outside the norm, which is the typical scenario in which creativity dwells.

From a research perspective, Falco (2016) mentions that creativity is "the willingness to find

new, spontaneous, surprising and effective ideas" (p. 59). For his part, Amabile (1988) defines creativity as the production of novel and valuable ideas by an individual or a group of people working together. In that sense, Córdoba et al. (2018) mention that creativity and innovation should coexist because they are two different constructs; they generate greater effectiveness when enhanced collectively. For this reason, these authors define creativity as "an ability that human beings have to generate ideas, problem solutions or offer different interpretations or solutions to different socioeconomic, social, and contextual realities" (p. 56).

In the organizational context, experts have given different definitions of creativity. Sousa et al. (2012) indicate that organizational creativity is a system for developing and channeling individual creativity through teams into monetary innovations of the company. Finally, DiLiello and Houghton (2008) mention that creativity in the organizational context has three interrelated dimensions: creative potential, creative practice, and perceived organizational support.

DiLiello and Houghton's Creativity Model (2008)

DiLiello and Houghton (2008) define *creative potential* as the individual's desire and ability to be creative. Boada-Grau et al. (2014) highlight that creative potential is what an individual performs to produce new ideas. DiLiello and Houghton define *creative practice* as the perceived opportunity to use creative skills and abilities at work. Creative practice is how individuals develop new ideas and practical skills and use their creative abilities in the organization (Boada-Grau et al., 2014). Finally, *organizational support* is the recognition the company gives its employees for being creative (Boada-Grau et al., 2014). Therefore, DiLiello and Houghton (2008) point out that individuals with strong creative potential are more likely to practice creativity when they feel organizational support. It is worth noting that this model of creativity helps employees generate new ideas for their work tasks through the three dimensions mentioned above (Boada-Grau et al., 2014).

DiLiello and Houghton's Creativity Model (2008) stands out as a superior framework for understanding workplace creativity compared to other prominent models such as the *Componential Model of Creativity* (Amabile, 1998, the *Interactionist Model of Creativity* (Woodman & Schoenfeldt, 1990), and the *Systems Model of Creativity* (Csikszentmihalyi, 1988). This assertion relies on several key aspects that underscore the model's comprehensiveness and practical applicability.

Firstly, DiLiello and Houghton's model uniquely integrates the concepts of creative potential, practiced creativity, and organizational support. This triadic approach provides a comprehensive understanding of creativity, encompassing not only the individual's inherent ability to generate novel ideas but also the practical application of these ideas in a work setting and the critical role of organizational support. In contrast, models like the Componential Model of Creativity (Amabile, 1996) primarily focus on individual-level factors such as domain-relevant skills, creativity-relevant processes, and task motivation without sufficiently addressing the organizational context that can either facilitate or hinder creative expression.

Secondly, DiLiello and Houghton's model emphasizes the dynamic interaction between an individual's creative potential and the organizational environment. This aspect aligns with the Interactionist Model of Creativity (Woodman & Schoenfeldt, 1990), which also takes into con-

sideration the interplay between personal traits and environmental factors. However, DiLiello and Houghton (2008) delve into the concept and explicitly define practiced creativity as the perceived opportunity to use creative skills at work, thus providing a clearer operationalization of how organizational support can translate potential into actual creative output. This clear delineation of practiced creativity and the role of organizational support offers actionable insights for managers aiming to cultivate a creative workforce.

Moreover, the model's emphasis on organizational support as a facilitator of practiced creativity directly addresses the limitations of the Systems Model of Creativity (Csikszentmihalyi, 1988), highlighting the broader sociocultural context; however, it lacks specific guidance on how organizations can nurture individual creativity. By focusing on organizational practices such as recognizing and rewarding creativity, DiLiello and Houghton's Creativity Model (2008) provides concrete strategies for fostering an environment that supports and enhances creative efforts.

In summary, DiLiello and Houghton's Creativity Model (2008) offers a more integrated and actionable framework for understanding and fostering workplace creativity. Its comprehensive approach, which combines individual capabilities with organizational support mechanisms, provides a robust foundation for enhancing creative performance in organizational settings.

Creative Potential and Practiced Creativity Scale (DiLiello & Houghton, 2008)

The Creative Potential and Practiced Creativity (CPPC-17) scale is a comprehensive instrument designed to measure two crucial aspects of creativity in the workplace: creative potential and practiced creativity. The scale comprises 17 items distributed across three factors: Creative Potential, Practiced Creativity, and Perceived Organizational Support. *Creative Potential* (6 items) assesses an individual's self-perceived ability to generate novel ideas and solve problems creatively, while *Practiced Creativity* (5 items) evaluates the opportunities individuals have to apply their creative skills in their work environment. *Perceived Organizational Support* (6 items) measures the degree to which an organization fosters and recognizes employee creativity.

The CPPC-17 demonstrates robust psychometric properties, with reliability coefficients (Cronbach's alpha) ranging from .84 to .94 across the three factors (English version) and from .80 to .90 (Spanish version), indicating high internal consistency. Confirmatory factor analysis (CFA) supports the scale's three-factor structure in both the original (DiLiello & Houghton, 2008) and subsequent studies (Boada Grau et al., 2014). Construct validity is shown by significant correlations with related constructs such as workaholism, irritation, burnout, and personality traits (Boada Grau et al., 2014). The CPPC scale was constructed through a rigorous process that included item development based on DiLiello and Houghton's (2008) conceptual framework of creativity, followed by exploratory and confirmatory factor analyses to refine the instrument and ensure its validity and reliability (DiLiello & Houghton, 2008).

The translation of the CPPC-17 scale from English to Spanish was conducted by Boada Grau et al. (2014) in Spain using the back-translation method. Initially, bilingual experts translated the 17-item scale into Spanish. According to the authors, the process followed guidelines for test adaptation, ensuring the Spanish version retained the psychometric properties of the original scale, including reliability and construct validity. For the present study, we used the Spanish version

translated by Boada Grau et al. (2014). We analyzed each instrument item, word by word, for linguistic equivalence, and found it equivalent to the Spanish used in Puerto Rico.

Antecedents and Consequences of Creativity at Work

Creativity at work is influenced by various individual and organizational factors. At the individual level, motivational factors such as intrinsic motivation (Amabile, 1998; da Costa et al., 2015), thriving at work (Zhang et al., 2023), and work engagement (Gonlepa et al., 2023; Mubarak & Noor, 2018) are crucial. Social factors, such as leadership styles like *authentic* (Luu et al., 2019; Mubarak & Noor, 2018), *transformational* and c*harismatic* (Luu et al., 2019), as well as *leadership self-deprecating humor* and *identification* (Huang, 2023) foster follower creativity. *Leaders' creativity* also enhances *team creativity* (Li & Yue, 2019). *Psychological empowerment* (Mubarak & Noor, 2018) and *self-efficacy* (da Costa et al., 2015) significantly boost creativity, with *creative self-efficacy* building *confidence* and *innovative thinking* (DiLiello & Houghton, 2008). Other factors like *emotional intelligence*, *expressiveness*, and *positive affect* are also important (da Costa et al., 2015).

Creativity in the workplace has numerous positive outcomes. At the individual level, creativity can enhance *well-being* by providing a flexible response to stress (Helzer & Kim, 2019). It also helps individuals *stay focused on goals* and continuously improve their *skills* (Sajid et al., 2017). At the organizational level, leadership that promotes creativity can lead to beneficial emotional states among employees, fostering *problem-solving*, *questioning existing methods*, *idea generation*, and *positive discussions* (Shalley et al., 2015). When supervisors encourage creativity, *staff vision*, and *self-confidence* improve, enhancing *leadership performance* (García-Vidal et al., 2019).

Justification

According to Blomberg et al. (2017), competition, economic situation, and urgency to change have given way to organizational creativity. These authors mention that organizational creativity is emerging as a distinct space for academic research. They also recommend that organizations be adaptive, flexible, and innovative, according to the requirements that have brought organizational creativity to the center of managerial interests in recent years. Therefore, this study aims to analyze the psychometric properties of the validity and reliability of the CPPC-17 inferences to support and contribute to the development of research, the process of organizational diagnosis, and the practice of Industrial Organizational Psychology. This management will be relevant for organizations, employees, clients, and professionals of Industrial Organizational Psychology to enhance creativity in the work context.

Purpose of the Study

This research analyzes the psychometric properties of the Creative Potential and Creative Practice Scale (CPPC-17) in the Puerto Rico laboral context. The specific objectives of the study are:

1. To analyze the factor structure of the Creative Potential and Creative Practice Scale of Boada-Grau et al. (2014) employing confirmatory factor analysis with structural equations.

2. To analyze the discriminatory ability of the CPPC-17 items.
3. To analyze the reliability of the CPPC-17 and its factors using Cronbach's alpha internal consistency index and composite reliability.
4. To analyze the convergent and divergent validity of the CPPC-17 factors using the extracted mean analysis of variance.

Method

Design

This research used an instrumental study design (Montero & León, 2007) to analyze the psychometric properties of the CPPC-17 (Boada Grau et al., 2014) through confirmatory factor analysis. Consequently, we tested the instrument's factor structure and, in this way, we met the proposed objectives.

Participants

We obtained approval for this research from the Institutional Review Board (IRB) of Albizu University in San Juan, Puerto Rico. We collected sociodemographic information on gender, age, academic preparation, marital status, number of years working for the company, type of company, and type of industry.

The final sample of this study was composed of 1021 participants, 65% of whom indicated that they were female and 35% male, with ages ranging from 21 to 78 (M = 35.91, SD = 11.04). Regarding academic preparation, 38.8% of participants indicated having a high school or bachelor's degree.

Measure

Spanish version of the Creative Potential and Creative Practice Scale (CPPC-17). DiLiello and Houghton (2008) originally developed this scale and adapted it to Spanish by Boada-Grau et al. (2014). This instrument has 17 items, which measures three factors linked to creativity: six items of creative potential (α = .84; e.g., *"I feel comfortable trying new ideas"*), five items of creative practice (α = .84; e.g., *"At work, my creative abilities are used to the fullest"*), and six items of perceived organizational support (α = .94; e.g., *"In my company, creative work is appreciated"*). The scale has a Likert-type response format with anchors ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

General Procedures

For this study, we contacted participants electronically (e.g., via Facebook and email) and invited them to participate in the research by sharing the link to answer the survey. We collected the responses through the Survey Monkey® platform and downloaded them to a data matrix for further analysis.

Data Analysis Procedures

For this purpose, we performed different statistical analyses to assess the psychometric properties of the CPPC-17: 1) Multivariate normality analysis of the data; 2) Confirmatory factor analysis using structural equations with correction of the adjustment indexes using the corrections of Satorra and Bentler (2001); 3) Item discrimination analysis; 4) Correlation analysis (direct and factor scores of the scale); 5) Reliability analysis; and 6) Analysis of discriminant and conver-

gent validity. The statistical programs used were AMOS Graphics version 26, IBM SPSS Statistics version 26, Stata version 14, and *R* version 3.3.3.

Results

Item Descriptive Analysis

As part of the analyses, we obtained means and standard deviations for all CPPC-17 items to analyze the distributional properties of the scale. Means ranged from 3.55 to 4.32, with standard deviations from 1.26 to 1.73. We conducted an analysis of multivariate normality of the data using the Mardia, *Doornik-Hansen*, and *Henze-Zirkler M-statistical* tests (Doornik & Hansen, 2008), which also did not indicate this type of normality in the scale: M for skewness = 53.70121, χ^2 (969) = 8765.239, $p < .001$; M for kurtosis = 562.4389, χ^2 (1) = 21654.437, $p < .001$; Henze-Zirkler = 6.926755, χ^2 (1) = 5.96, $p < .001$; Doornik-Hansen χ^2(100) = 2073.329, $p < .001$. Since normality assumptions were not met, we used the corrections of Satorra and Bentler (2001) to calculate the fit of the structural equation models tested.

Factorial Analysis of the Scale

To analyze the factor structure of the CPPC-17, we tested two models using the confirmatory factor analysis with structural equations and the maximum likelihood estimation method. The first model tested was a base model (M1) in which the 17 CPPC-17 items represented a single latent factor. The results of the confirmatory factor analysis for M1 did not show an adequate fit to the data: χ^2 = 7181.882 (119) $p < .001$, *RMSEA* = .24, *CFI* = .59, *NFI* = .58, *IFI* = .59, *AIC* = 7249.882, corrected χ^2 = 542.4706 (116), $p < .001$, corrected *CFI* = .59, corrected *NFI* = .29, corrected *IFI* = .59, corrected *AIC* = 7184.412. This fact indicates that the CPPC-17 may consist of more than one factor. Then, we proceeded to test a model (M2) consisting of three factors (creative potential, creative practice, and perceived social support) as the scale design (M2) is the same as the one devised in the CPPC-17 originally. This second model showed a good fit to the data (Hu & Bentler, 1999) (see Table 1). The results of the three-factor M2 (see Figure 1) with an adequate fit to the data, χ^2 = 911.4705 (116) $p < .001$, *RMSEA* = .08, *CFI* = .95, *NFI* =.95, *IFI* = .95, *AIC* = 985.4705, corrected χ^2 = 542.4706 (116), < .001, corrected *CFI* = .96, corrected *NFI* =.96, corrected *IFI* = .96, corrected *AIC* = 914.4683. These indices comply with what Satorra and Blenter (2001) consider acceptable levels. Figure 1 shows the final version of the CPPC-17.

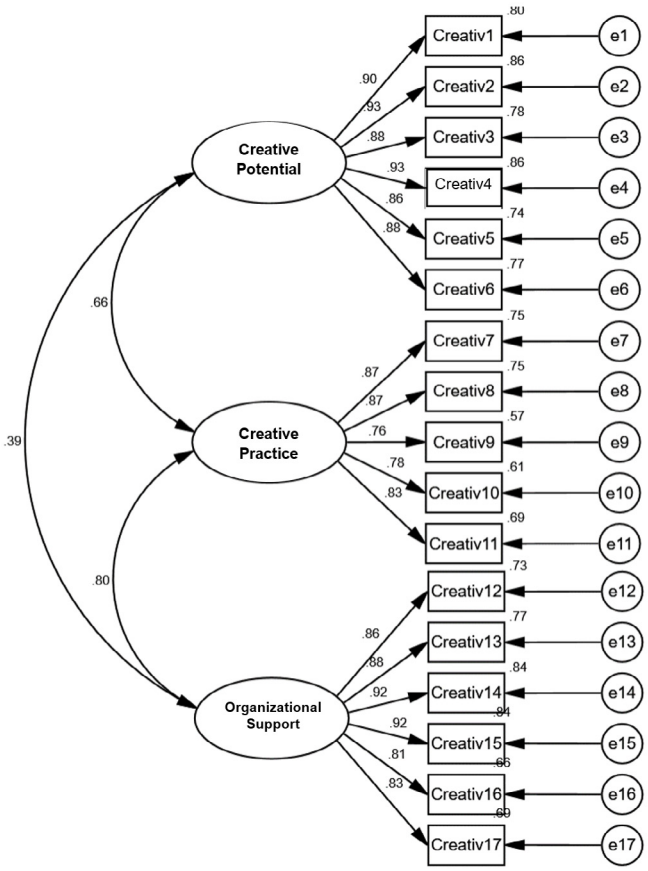

Figure 1.
A three-factor model of creativity.

Table 1
Discrimination indices and explained variance of the items in the final version of the CPPC-17.

Items	Discrimination index	R^2
1. I think I am good at generating innovative ideas.	.90	.80
2. I am confident in my ability to solve problems creatively.	.93	.86
3. I can further develop the ideas of others.	.88	.78
4. I am good at finding creative ways to solve problems.	.93	.86
5. I have the talent and skills to do my job well.	.86	.74
6. I feel comfortable trying new ideas.	.88	.77
7. At work, I have the opportunity to use my skills and creative abilities.	.87	.75
8. At work, people invite me to present ideas for improvement.	.87	.75
9. I have the opportunity to participate in teams.	.76	.57
10. I am free to decide how to carry out my tasks.	.78	.61
11. At work, my creative abilities are used to the fullest.	.83	.69
12. In my company, creative work is appreciated..	.86	.73
13. My company judges ideas fairly.	.88	.77
14. In my company, people are encouraged to solve problems creatively.	.92	.84
15. My company has good methods to encourage and develop creative ideas.	.92	.84
16. My company rewards innovative and creative ideas.	.81	.66
17. I think I am good at generating innovative ideas.	.83	.69

Note. R^2 = Variance explained; Items 1 to 6 = Creative Potential; Items 7 to 11 = Creative Practice; Items 12 to 17 = Organizational Support.

Following the recommendations proposed by Schumacker and Lomax (2010), the AIC_{corr} was used to compare the structural equation models since the χ values[2] were statistically significant. Given this, M2 presented a lower index (AIC_{corr} = 914.4683) than M1 (AIC_{corr} = 7,184.412). When comparing both models, M1 presented a greater difference in its AIC_{corr} (ΔAIC_{corr} = 6,269.9437).

Item Analysis

Discrimination of the 17 CPPC-17 items was analyzed using the total item correlation index. Item discrimination ranged from .64 to .80. Likewise, the factors' explained variance ranged between .37 and .54 (see Table 1). The discrimination indices in the CPPC-17 (M2) final version are above the recommended minimum value of .30 (Kline, 2005).

Reliability Analysis

As part of the objectives of this research, we analyzed reliability and composite reliability for the final three-factor version of the CPPC-17. Cronbach's alpha values for the CPPC-17 factors ranged from .91 to .96. The composite reliability of the factors (omega index) fluctuated between .91 and .96 (see Table 2). All indexes exceed the recommended minimum of .70 (Bagozzi & Yi, 2012).

Table 2
Means, standard deviations, alphas, composite reliability, mean variance extracted and correlations (N = 1,021).

	M	DE	α	FC	VME	1	2	3
1. Creative Potential	4.04	1.21	0.96	.96	.81	-	.66	.39
2. Creative Practice	4.52	1.39	0.91	.91	.68	.63	-	.80
3. Organizational Support	3.86	1.46	0.95	.95	.76	.38	.75	-

Note. *M* = mean; *SD* = standard deviation; α = Cronbach's alpha; *CF* = composite reliability; *SMV* = mean variance extracted. All correlations were significant at $p < .001$. Values above the diagonal represent correlations between latent factors, whereas values below the diagonal represent correlations of direct scores.

Convergent and Discriminant Validity Analysis

Convergent and discriminant validity were analyzed using the Average Variance Extracted (AVE), which measures the average variance explained by the construct in the items. High values in the AVE indicate lower error variance. Fornell and Larcker (1981) suggest that the variance shared between two factors is always less than the variance explained, thus fulfilling the discriminant validity criterion. The values obtained for the AVE of the CPPC-17 factors fluctuated between .68 and .80 (see Table 2). Fornell and Larcker (1981) suggested that values equal to or greater than .50 are acceptable. In addition, the relationship between the factors of the CPPC-17 was analyzed using Pearson's *r* correlation. The correlations between the factors fluctuated between .38 and .74 (see Table 2).

Discussion

The purpose of this research was to analyze the psychometric properties of CPPC-17. The three-factor structure proposed by DiLiello and Houghton (2008) was replicated. The discrimination ability of the items proved to be adequate. We performed Cronbach's alpha analysis and found the instrument to be reliable. Finally, we analyzed the convergent and discriminant validity of the instrument, and we determined that each of the instrument's dimensions measures a particular construct; therefore, there is no redundancy among the items.

Theoretical Implications

In light of our findings, the study helps us understand work creativity in the Puerto Rican organizational context from the theoretical model proposed by DiLiello and Houghton (2008). Similarly, the results show us that the Creative Potential and Creative Practice Scale (CPPC-17) is suitable for research in the Puerto Rican workplace because creativity is measured validly and consistently. At the same time, using this scale will allow us to study creativity about other variables, such as identifying antecedents and consequences in the Puerto Rican work environment. It is worth noting that, according to the results, no problems arise due to the findings, and it also guarantees its application in our work context. On the other hand, our research provides empirical evidence in the Puerto Rican work context that strengthens the theory of creativity proposed by DiLiello and Houghton (2008) with its three interrelated dimensions (creative potential, creative practice, and organizational support) that positively influence and mutually enhance each other.

Approaches established in the studies of Boada Grau et al. (2014) and DiLiello and Houghton (2008) support this empirical evidence.

Our psychometric results indicate that the subscales of the CPPC-17 demonstrated high levels of reliability for its dimensions, which are comparable to previous studies (Boada-Grau et al., 2014; DiLiello & Houghton, 2008). In comparison with the Spanish adaptation of Boada-Grau et al. (2014), our results are consistent in reliability and validity, suggesting that the CPPC-17 is a robust instrument for assessing creativity in different cultural contexts. These similarities reinforce the applicability of the CPPC-17 in diverse companies, indicating that it can successfully serve to identify and promote creative potential among employees. However, it is important to recognize that the type of sampling and the diversity of the sample in our study may limit the generalizability of these results. Therefore, there is a need for future research with large-scale and more diverse samples.

Practical Implications

The practical implications of this study enable us to make available a psychometric instrument whose inferences are valid and reliable to measure the three factors of work creativity (creative potential, creative practice, and perceived organizational support). In the same way, this study provides psychometric evidence of the CPPC-17 instrument to carry out research, as well as organizational diagnosis in Puerto Rican workplaces. This instrument allows us to evaluate work creativity at the individual level based on the model proposed by DiLiello and Houghton (2008). Similarly, this scale can be used in its entirety, with its three dimensions of work creativity and its particular dimensions, if necessary, under the criteria of research interest.

Limitations and Strengths

One of the limitations of this study is that the sampling is subject to availability, so the results do not apply to the whole population of Puerto Rico. However, the study sample is broad (1021 participants) and heterogeneous from different workplaces in the Puerto Rican context. Finally, as a strength, this research provides empirical information on work creativity in the same context.

Use of the Scale

The CPPC-17 Scale is divided into 17 items and three factors linked to creativity: creative potential, creative practice, and organizational support. The CPPC-17 could be used both in groups and individually. The scores of this instrument should be calculated for each of the factors mentioned earlier. The value obtained for each item should be summed to get the mean score per-factor. Then, the result should be divided by the number of items per-factor: creative potential (6 items), creative practice (5 items), and perceived organizational support (6 items). Each item is answered with a response anchor ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Calculating the mean scores of the scale factors provides an average score on the same response anchor as the CPPC-17. The average scores can fluctuate between 1 and 5.

Future Studies

Some suggestions for future research could address studying how factors in the work context promote creativity. That is, how the type of task, the structure of the job, and the work sector may affect workers' creativity. In turn, such new stud-

ies should analyze the influence of psychosocial factors such as mobbing or social support affect creativity at work likewise, how practices aimed at promoting the meaning of work (e.g., job crafting, the meaning of and in work) enhance creative practices. Finally, to analyze the organizational consequences of work creativity in different work environments (e.g., third-sector companies, governments, and private companies, among others).

General Conclusions

The literature review shows that creativity in the workplace catalyzes new ideas that help innovate and transform the work environment. An example of this is the discovery of Velcro by Georges de Mestral, who never thought that his invention would change the management of the textile industry.

In addition to providing a measurement instrument, this study demonstrated that creativity in the workplace manifests human behavior to be, rethink, and do work tasks differently, novelly, and dynamically. For this to be possible, people need to have the desire to create and put into practice their creative skills and abilities. In addition, they need to have the support from the company and other people who value, make, and enjoy the creative process, as Albert Einstein said, "*creativity is intelligence having fun*".

References

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior, 10*(1), 123-167.

Amabile, T. M. (1998). *How to kill creativity. Harvard Business Review, 76*(5), 76-87.

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state of the science review, prospective commentary, and guiding framework. *Journal of Management, 40*(5), 1297-1333. https://doi.org/10.1177/0149206314527128

Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science, 40*(1), 8-34. https://doi.org/10.1007/s11747-011-0278-x

Blomberg, A., Kallio, T., & Pohjanpää, K. (2017). Antecedents of organizational creativity: Drivers, barriers or both? *Journal of Innovation Management, 5*(1), 78-104. https://doi.org/10.24840/2183-0606_005.001_0007

Boada-Grau, J., Sánchez-García, J.C., Prizmic-Kuzmica, A.J., & Vigil-Colet, A. (2014). Spanish adaptation of the Creative Potential and Practiced Creativity scale (CPPC-17) in the workplace and inside the organization. *Psicothema, 26*(1), 55-62. https://doi.org/10.7334/psicothema2013.68

Cavaliere V., Lombardi S., & Giustiniano L. (2015). Knowledge sharing in knowledge-intensive manufacturing firms: An empirical study of its enablers. *Journal of Knowledge Management, 19*(6), 1124-1145. https://doi.org/10.1108/JKM-12-2014-0538

Córdoba-Zuñiga, E., Castillo-Toro, J. & Castillo-Quesada, N. (2018). Creatividad e innovación: Motores de desarrollo empresarial. *Lámpsakos (Revista Descontinuada), 1*(19), 55-65. http://dx.doi.org/10.21501/21454086.2663

Csikszentmihalyi, M. (1988). Society, culture, and person: A systems view of creativity. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 325-339). Cambridge University Press.

da Costa, S., Páez, D., Sánchez, F., Garairgordobil, M., & Gondim, S. (2015). Personal factors of creativity: A second order meta-analysis. *Journal of Work and Organizational Psychology*, *31*(3),165-173. https://doi.org/10.1016/j.rpto.2015.06.002

DiLiello, T. C., & Houghton, J. D. (2008). Creative potential and practiced creativity: Identifying untapped creativity in organizations. *Creativity and*

Innovation Management, 17(1), 37-46. https://doi.org/10.1111/j.1467-8691.2007.00464.x

Doornik, J. A., & Hansen, H. (2008). An omnibus test for univariate and multivariate normality. *Oxford Bulletin of Economics and Statistics, 70*(1), 927-939. https://doi.org/10.1111/j.1468-0084.2008.00537.x

Falco, M. (2016). Potenciando la creatividad en el ámbito organizacional. *Ciencias Administrativas, 8*, 53-60.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.2307/3151312

García-Vidal, G., Sánchez-Rodríguez, A., Pérez-Campdesuñer, R., & Martínez-Vivar, R. (2019). The impact of self-confidence, creativity and vision on leadership performance: Perceptions at Ecuadorian SMEs owner/managers. *Serbian Journal of Management, 14*(2), 315-325. https://doi.org/10.5937/sjm14-17569

Gonlepa, M. K., Dilawar, S., & Amosun, T. S. (2023). Understanding employee creativity from the perspectives of grit, work engagement, person organization fit, and feedback. *Frontiers in Psychology, 13*, 1012315. https://doi.org/10.3389/fpsyg.2022.1012315

Gu, Q., Tang, T. L.-P., & Jiang, W. (2015). Does moral leadership enhance employee creativity? Employee identification with leader and leader-member exchange (LMX) in the Chinese context. *Journal of Business Ethics, 126*(3), 513-529. https://doi.org/10.1007/s10551-013-1967-9013-1967-9

Helzer, E. G., & Kim, S. H. (2019). Creativity for workplace well- being. *Academy of Management Perspectives, 33*(2), 134-147. https://doi.org/10.5465/amp.2016.0141

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Huang, M.-J. (2023). Leader self-deprecating humor and employee creativity at workplace: A longitudinal study. *Review of Managerial Science, 17*(2), 467-492. https://doi.org/10.1007/s11846-022-00532-w

Kline, T. J. (2005). *Psychological testing: A practical approach to designand evaluation.* SAGE Publications.

Li, T., & Yue, C. (2019). Working with creative leaders: An examination of the relationship between leader and team creativity. *Social Behavior & Personality: An International Journal, 47*(6), 1-12. https://doi-org/10.2224/sbp.8084

Luu, T. T., Rowley, C., Dinh, C. K., Qian, D., & Le, H. Q. (2019). Team Creativity in public healthcare organizations: The roles of charismatic leadership, team job crafting and collective public service motivation. *Public performance & Management Review, 42*(6), 1448-1480. https://doi.org/10.1080/15309576.2019.1595067

Montero, I., & León, O. G. (2007). A guide for naming research studies in Psychology. *International Journal of Clinical and Health Psychology, 7*(3), 847-862.

Mubarak, F., & Noor, A. (2018). Effect of authentic leadership on employee creativity in project-based organizations with the mediating roles of work engagement and psychological empowerment. *Cogent Business & Management, 5*(1), 1-12. https://doi.org/10.1080/23311975.2018.1429348

Ramos, M. A. W., Figueiredo, P. S., & Pereira- Guizzo, C. (2018). Antecedents of innovation industry: The impact of work environment factors on creative performance. *Innovation & Management, 15*(3), 269-285. https://doi.org/10.1108/INMR-05-2018-0032

Rahman Khattak, S., Saleem, Z., & Khan, H. (2017). Relationship between goal orientation and employee creativity: A mediating role of creative self-efficacy. *International Journal of Organizational Leadership, 6*(4), 434-443. https://doi.org/10.33844/ijol.2017.60338

Sajid, K., Zafar, S., & Hadayat, K. (2017). Relationship between goal orientation and employee creativity: A mediating role of creative self-efficacy. International Journal of Organizational Leadership, 6(4), 434-443. https://doi.org/10.33844/ijol.2017.60338

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika, 66*, 507-514. https://doi.org/10.1007/BF02296192

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling* (3rd ed.). Routledge/Taylor & Francis Group.

Shalley, C. E., Hitt, M. A., & Zhou, J. (Eds.). (2015). *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199927678.001.0001

Sousa, F., Pellissier, R., & Monteiro, P. (2012). Creativity, innovation and collaborative organizations. *The International Journal of Organizational Innovation, 5*(1), 26-64. http://hdl.handle.net/10400.1/2611

Woodman, R. W., & Schoenfeldt, L. F. (1990). An interactionist model of creative behavior. *The Journal of Creative Behavior, 24*(1), 10-20. https://doi.org/10.1002/j.2162-6057.1990.tb00525.x

Zhang, R., Kang, H., Jiang, Z., & Niu, X. (2023). How does workplace ostracism hurt employee creativity? Thriving at work as a mediator and organization-based self-esteem as a moderator. *Applied Psychology: An International Review, 72*(1), 211-230. https://doi.org/10.1111/apps.12374