

# UNDERSTANDING EMPLOYEES' ENTREPRENEURIAL ALERTNESS: THE ROLE OF CREATIVITY AND SUPPORT FOR CREATIVITY

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## ABSTRACT

*Considering a perspective on the integration of creativity research, entrepreneurship and innovation, this study examines the possibility that employees' creative potential at work is related to their level of practised creativity. That practised creativity, in turn, is related to their entrepreneurial alertness. The study also examines whether these relations are moderated by the support for creativity that employees receive from supervisors and co-workers. Using data from 278 middle-managers from medium and large firms, results indicate that creative potential is significantly related to practised creativity. However, practised creativity is not significantly related to all dimensions of entrepreneurial alertness. Moderating effects suggest that support for creativity strengthens the significant relationships. Results also show that practised creativity mediates the relationship between creative potential and entrepreneurial alertness. This study discusses the results and their implications for future research and practice.*

## INTRODUCTION

Increasingly, firms are interested in encouraging employees to be more creative because individual creativity constitutes a precursor of both entrepreneurship and firm-level innovation (Shalley, Hitt & Zhou, 2015). Hence, today, firms have placed special attention on creative, innovative and entrepreneurial thinking and abilities to produce more valuable outcomes (Dino, 2015). Because of their interdependence, some researchers (e.g. Dino, 2015; Shalley et al., 2015; Ward, 2004; Zhou, 2008) have proposed integrating research on these phenomena, which appear inextricably connected yet conceptually distinct. Specifically, creativity involves a generation of ideas that are both novel and useful (Amabile, 1996); innovation focuses on the implementation of creative ideas (Baer, 2012) and entrepreneurship refers to the recognition of opportunities for useful outcomes (Shane, 2012).

More recently, research has focused on understanding the factors influencing creativity at work for promoting entrepreneurship within established firms (e.g. Blauth, Mauer & Brettel, 2014; Kuratko, 2015; Zhou & Hoever, 2014). Creativity is a key element of entrepreneurship, since it contributes to the unfolding of the whole entrepreneurial process and, within the entrepreneurial process, as has been suggested by some authors (e.g. Costa, Ehrenhard, Caetano & Santos, 2016; Gielnik, Frese, Graf & Kampschulte, 2012; Shane, 2012) opportunity recognition is the first stage and occurs at both individual and subjective levels. Considering that individuals vary in their ability to combine existing concepts into new ideas (Ward, 2004), creativity plays a role in opportunity recognition because it involves recognizing novel associations or patterns across disparate data points (Baron, 2006; Gielnik et al., 2012).

Acknowledging that idea generation and the recognition of opportunities are two distinguishable elements of the entrepreneurial process, the current study examines the relationship between two overlooked facets of creativity, creative potential and practised

creativity (Caniëls & Rietzschel, 2015; DiLiello & Houghton, 2008), which may allow employees to be more alert and recognize opportunities from within firms. Thus, this study suggests that employees' creative potential is related to their level of practised creativity and that practised creativity, in turn, is related to the recognition of opportunities through the concept of entrepreneurial alertness (Tang, Kacmar & Busenitz, 2012). However, previous research (e.g. Amabile, Conti, Coon, Lazenby & Herron, 1996; Shalley, Zhou & Oldham, 2004; van Knippenberg & Hirst, 2015; Zhou & Hoever, 2014) has suggested that these relationships may be better understood from the moderating influences of the context in which the individual is embedded. Therefore, based on an interactionist approach (e.g. Oldham & Cummings, 1996; Woodman & Schoenfeldt, 1990), this study proposes the possibility that both of these relationships are moderated by the context, specifically support for creativity (Madjar, Oldham & Pratt, 2002).

The remainder of the study is organized as follows. The next section reviews the relevant literature and the development of the hypotheses. This is followed by a description of the research method. Results from the hierarchical regression analysis are then presented. The study concludes with a general discussion highlighting contributions and implications as well as avenues for future research.

## LITERATURE REVIEW

### Creative Potential and Practised Creativity

Creativity is a construct that is difficult to define and it cannot be easily analysed because of the various factors involved (Amabile, 1996). Historically, creativity has been defined both as an outcome and as a process (Shalley & Zhou, 2008). As an outcome, creativity requires the generation of a novel and useful product, idea or solution (George, 2007; Hennessey & Amabile, 2010). As a process, creativity requires the search and selection of novel ideas and solutions to resolve open-ended problems that have value for the individual and/or a larger social group (Hennessey & Amabile, 2010; Shalley & Zhou, 2008).

A major direction of creativity research is to identify the factors that shape the processes involved, especially at the individual level (e.g. George, 2007; Shalley et al., 2004; Zhou & Hoever, 2014; Zhou & Shalley, 2011). Individual creativity in organizations is related to an ability to generate novel and appropriate ideas in order to increase organizational efficiencies, solve complex problems, develop new services and/or products and improve overall effectiveness of the organization (DiLiello & Houghton, 2006 & 2008). Unfortunately, two aspects of individual creativity, creative potential and practised creativity, which may be useful for making an important contribution to organizational innovation, competitiveness and survival, have been overlooked (DiLiello & Houghton, 2008).

The origin of the concepts of creative potential and practised creativity can be found in Hinton's (1968 & 1970) seminal works. According to Hinton (1968 & 1970), in the context of problem solving there is a difference between creative potential and the ability to materialize these skills and abilities through a creative behaviour. Following DiLiello and Houghton (2006 & 2008), creative potential can be defined as the creative capacity, skills and abilities that the individual possesses, while practised creativity may be defined as the perceived opportunity to use these skills, abilities and creative competencies on the job. Hence, creative potential is what an individual can do based on personal feelings about the ability to be creative, what Tierney and

Farmer (2002) called creative self-efficacy and practised creativity is what the individual is going to do in terms of generating novel and useful ideas.

Initially, DiLiello and Houghton (2008) examined the construct validity of creative potential and practised creativity in the workplace, including an examination of discriminant validity. Later, Caroff and Lubart (2012) explored the detection of creative potential in managers, concluding that the profile for managerial creativity varied, to some extent, with the kind of managerial task, rather than it being a general ability. In the context of firms, Dayan, Zacca and Di Benedetto (2013) found that the individual factors of expertise and creative self-efficacy were significantly related to entrepreneurial creativity. In this perspective, using a meta-analytic examination, Liu, Jiang, Shalley, Keem and Zhou (2016) revealed that intrinsic motivation, creative self-efficacy and prosocial motivation had unique explanatory power in predicting creativity. More recently, Caniëls and Rietzschel (2015) reported on a preliminary study that the degree to which employees perceived constraining organizational factors were related to their creative potential and practised creativity. According to Houghton and DiLiello (2010), the more creative self-efficacy individuals have, the more likely they are to perceive opportunities where they can effectively apply their creative potential in the form of practised creativity. Thus:

*H1: The higher employees' creative potential, the greater their level of practised creativity.*

### **Practised Creativity and Entrepreneurial Alertness**

Two of the key topics in the field of entrepreneurship are the study of entrepreneurship within incumbent firms and opportunity recognition. Firms that develop employees who take risks and innovate demonstrate the importance of corporate entrepreneurship (Kuratko, 2015) and the recognition of an opportunity worth pursuing is the first step of any entrepreneurial activity (McMullen & Shepherd, 2006). In general, Baron (2006, p. 107) defined an opportunity as “a perceived means of generating economic value (profit) that previously has not been exploited and is not currently being exploited by others.” Entrepreneurial opportunities emerge from the cognition and behaviours of individuals when they socially interact with other members within an organization or a group (Wood & McKinley, 2010). According to Ma and Huang (2016), not only does the individual knowledge of employees exert influence in their alertness to the recognition of opportunities, but organizational factors also exert influence.

Kirzner (1973) was the first to use the term “alertness” to explain the individual entrepreneur’s recognition of opportunities. Defined as an individual’s ability to identify opportunities that are overlooked for others, Kirzner (1979) mentioned that entrepreneurial alertness is a distinctive set of perceptual and cognitive processing skills that direct the opportunity recognition process. Building on Kirzner’s (1973) work and McMullen and Shepherd’s (2006) proposal, Tang et al. (2012) considered alertness to be a process that involves how individuals connect seemingly disparate information and assess whether promising opportunities exist. Similarly, Rigolizzo and Amabile (2015) argued that creativity is a staged process supported by learning and creative behaviours, which depend on particular social environment conditions at each stage. According to Tang and Murphy (2012), at the firm level, this learning behaviour allows employees to be more alert to recognize opportunities to new products, new markets or new technologies by making novel connections.

Stemming from the premise that creativity is an indispensable component in entrepreneurial alertness and that both are considered processes (e.g. Ardichvili, Cardozo & Ray,

2003; Gielnik et al., 2012; Kirzner, 2009), Tang et al. (2012) proposal is interesting because they conceptualized entrepreneurial alertness with three complementary dimensions or stages that measure different aspects of alertness. Alert scanning and search refers to constantly scanning the environment to identify information or changes that have gone unnoticed by some people; alert association and connection relates to gathering information of a different nature and using that knowledge to build new alternatives; and evaluation and judgment involves making assessments and judgments about changes or new information and deciding whether these reflect a potential profit opportunity. Tang et al. (2012, p. 88) mentioned that “the three dimensions of alertness are distinct and measure different aspects of alertness.” Therefore, it is not appropriate to group all items and obtain one value for entrepreneurial alertness.

Although practised creativity and entrepreneurial alertness are different and important for opportunity recognition, previous research has not directly examined the relationship between them. However, previous results suggest the possibility of a relationship. For example, Zhou and Shalley (2003) indicated that individuals who are engaged in what they do at work are not only more curious but also more willing to take risk, such as engaging in exploratory behaviours and experimentation. Also, exploring and experimenting with new and alternative routes to solving problems usually requires employees to refine and expand their initial ideas or solutions to ensure that they adequately address a given problem. This, according to Tang et al. (2012), is a natural characteristic of entrepreneurial alertness. Extending this reasoning, Dayan, Zacca and Di Benedetto’s (2013) study revealed that intrinsic motivation and alertness to opportunity were the key mediators between contextual factors and entrepreneurial creativity. Besides, Blauth, Mauer and Brettel (2014) found that the use of entrepreneurial decision making logic positively impacted practised creativity, which, in turn can be regarded as a crucial requirement for employees in new product development. Therefore, the following hypotheses are proposed:

*H2: The higher employees’ practised creativity, the greater their level of entrepreneurial alertness.*

*H2a: The higher employees’ practised creativity, the greater their level of scanning and search dimension of entrepreneurial alertness.*

*H2b: The higher employees’ practised creativity, the greater their level of association and connection dimension of entrepreneurial alertness.*

*H2c: The higher employees’ practised creativity, the greater their level of evaluation and judgment dimension of entrepreneurial alertness.*

## **Moderating Effects of Support for Creativity**

Amabile et al. (1996) stated that creativity depends on internal components within the individual, which are highly influenced by the experience and by the immediate external social environment (e.g. the work environment in an organization). Coinciding with this approach, the idea that creativity is a social process is a well-accepted wisdom because the general notion is that interacting with others helps to generate and refine ideas (Amar & Juneja, 2008; Perry-Smith & Mannucci, 2015). The social environment can help expand the available inputs to creativity by providing a greater variety of ideas or information. An environment that supports the process of creativity, rather than the outcome, allows people to practice and learn both from and for the creative process (Rigolizzo & Amabile, 2015). Thus, the social environment can provide a setting that allows an individual to think freely and creatively and, ultimately, to generate and select highly creative ideas.

Based on early theory and research (Amabile, 1996; Amabile et al., 1996; Madjar, Oldham & Pratt, 2002; Oldham & Cummings, 1996; Woodman & Schoenfeldt, 1990), this study

considers the possibility that one dimension of the social environment, support for creativity and moderates the proposed creative potential–practised and creativity entrepreneurial alertness relationships. According to Madjar et al. (2002), support for creativity refers to the extent to which supervisors and co-workers encourage employees to develop and refine creative ideas. Support for creativity provides employees with the encouragement and assistance necessary to engage the idea generation process, as well as to persist in their creative endeavours (Zhou & George, 2001).

Previous studies suggest that support for creativity is an outcome of an intentional and designed effort of the organization; therefore, employees' creativity is an expected and valued aspect of their performance (Tierney & Farmer, 2004). For example, Baer and Oldham (2006) showed that the curvilinear relation between experienced creative time pressure and creativity was moderated by the support for creativity. In relation to some practices to foster employees' creativity, Zhan, Long, Wu and Huang (2015) found that the effect of pay for performance on creativity was invariantly moderated by some human resources management practices. Moreover, a study by Park, Shin, Lee and No (2015) revealed that the role of the chief executive officer's learning goal orientation influenced the relationship between human resource management practices and organizational creativity.

In addition, studies have examined the influence leaders have. Within an existing organization, leaders at different levels can engender the proper environment by voicing support for creative and entrepreneurial behaviour. For example, previous studies have shown that individuals with leaders who supported and encouraged creativity felt more capable of creative work and were more creative (Tierney & Farmer, 2004 & 2011). Similarly, Castro, Gomez and de Souza (2012) studied the effect of a leader's emotional intelligence on followers' creativity with a mediating role of climate. The findings confirmed a positive relationship; however, no mediating role effect of climate was observed. In the same way, Wen, Zhou and Lu's (2017) study showed that leaders' creativity can be present as both worker creativity and manager creativity and that leader identification plays a different role in moderating the effects of worker creativity and manager creativity on employees' individual and team creativity.

Although previous studies have argued the benefits of support for creativity on employee creativity, some results are not conclusive in this aspect. For example, Castro et al. (2012) observed that employees' creativity exists in spite of the organizational climate. Also, Zhou (2003) found non-significant relationships between employee creativity and supervisor development feedback. From the arguments developed previously, this research considers it reasonable that support for creativity may moderate the relationships argued earlier. Therefore, the support for creativity's moderating effect arises in the following hypotheses:

*H3: Support for creativity moderates the relationship between employees' creative potential and their level of practised creativity.*

*H4: Support for creativity moderates the relationship between employees' practised creativity and their level of entrepreneurial alertness.*

*H4a: Support for creativity moderates the relationship between employees' practised creativity and their level of scanning and search dimension of entrepreneurial alertness.*

*H4b: Support for creativity moderates the relationship between employees' practised creativity and their level of association and connection dimension of entrepreneurial alertness.*

*H4c: Support for creativity moderates the relationship between employees' practised creativity and their level of evaluation and judgment dimension of entrepreneurial alertness.*

## RESEARCH METHOD

### Participants and Procedure

The study was based on a purposive sampling method in which employees were middle-managers working for medium and large firms. The employees were selected using business graduate courses in five universities in Puebla, Mexico. Employees were allowed to participate as long as participation was voluntary. A paper-based questionnaire was used to administer the survey. To apply the questionnaire, assistance from professors of the five universities was necessary for application of the questionnaire in class. Before completing the questionnaires, employees were assured that all information provided would be kept confidential. A total of 278 usable questionnaires were collected. The participants' ages ranged from 27 to 45 years old, with an average age of 32.5 years and 37% were women.

### Measures

All items were rated on a 5-point scale from strongly disagree to strongly agree, unless otherwise noted.

#### Creative Potential

This was measured using six items suggested by DiLiello and Houghton (2008) and was averaged to form an index. Sample items include: "I have confidence in my ability to solve problems creatively" and "I have the talent and skills to do well in my work." Cronbach's alpha for creative potential was 0.820.

#### Practised Creativity

Five items developed by DiLiello and Houghton (2008) were averaged to create a measure of practised creativity. Sample items include: "I have opportunities to use my creative skills and abilities at work" and "I have the freedom to decide how my job tasks get done." Cronbach's alpha for practised creativity was 0.774.

#### Entrepreneurial Alertness

This was measured using Tang et al., (2012) scale, which includes three dimensions: Scanning and search, association and connection and evaluation and judgment. The entrepreneurial alertness items were measured as follows: Six scanning and search items (e.g. I have frequent interactions with others to acquire new information; I am an avid information seeker); three association and connection items (e.g. I see links between seemingly unrelated pieces of information; I am good at "connecting dots"); and four evaluation and judgment items (e.g. I have a gut feeling for potential opportunities; When facing multiple opportunities, I am able to select the good ones). Cronbach's alpha for each dimension were 0.757, 0.781 and 0.822, respectively.

## Support for Creativity

Five items derived from those developed by Madjar et al. (2002) were averaged to create a measure of support for creativity from boss and co-workers. Sample items include: “My boss gives me useful feedback about my ideas concerning the workplace” and “My co-workers other than my boss are almost always supportive when I come up with a new idea about my job.” The scale demonstrated acceptable reliability ( $\alpha=0.76$ ).

## Control Variables

To reduce the probability that other variables are likely to affect creativity, the analysis controlled for middle-managers’ age and job complexity. Previous research suggests that age has positive effects on creativity (Binnewies, Ohly & Sonnentag, 2007). Also, complex jobs can provide more opportunities to exhibit creativity than simple jobs (Tierney & Farmer, 2002). Therefore, job complexity was also measured using two items suggested by Oldham, Cummings, Mishel, Schmidtke and Zhou (1995): “Overall, how complex is this job?” and “Overall, how much training is required for a person to successfully complete this job?” Scale anchors were “not at all complex” (1) and “very complex” (5) for the first item and “very little training required” (1) and “a great deal of training required” (5) for the second item. The ratings were averaged to form a job complexity index. Cronbach’s alpha was 0.801.

## Discriminant Validity

Prior to testing the hypotheses, confirmatory factor analysis (CFA) was performed and the square root of the average variance extracted (AVE) was obtained for each variable to evaluate discriminant validity. Three models were identified and compared, where the first model considered all items in one factor. The second model was obtained using five factors, in which it was expected that job complexity, creative potential, practised creativity, support for creativity and entrepreneurial alertness (integrating the three dimensions) would load in their respective factors. Finally, a third model with seven factors was estimated, in which entrepreneurial alertness was considered to have three dimensions that cannot be combined. In accordance with Hu and Bentler (1999), Table 1 shows the threshold values and the results for each model. The results indicate that the seven-factor model has a better adjustment because all items loaded significantly in their respective latent variables.

<b>Model</b>	<b>CFI (&gt;0.90)</b>	<b>NFI (&gt;0.90)</b>	<b>GFI (&gt;0.90)</b>	<b>RMSEA (&lt;0.05)</b>	<b><math>\chi^2/df</math> (&lt;3.0)</b>
One factor	0.51	0.63	0.70	0.28	4.33
Five factors	0.86	0.84	0.90	0.07	3.41
Seven factors	0.91	0.92	0.94	0.05	2.88

Following Fornell and Larcker (1981), the square root of the AVE was obtained for each one of the seven variables. The results indicate that the square root of the AVE values (main

diagonal of Table 2) were greater than all the correlations they had with the other variables, therefore they are considered satisfactory (Hair, Black, Babin, Anderson & Tatham, 2006). The results of CFA and AVE analyses indicate that the study's variables are different, suggesting satisfactory discriminant validity.

## RESULTS

As shown in Table 2, creative potential and practised creativity were positively but moderately correlated ( $r=0.28$ ,  $p<0.001$ ). There are also positive and significant correlations among the three dimensions of entrepreneurial alertness ( $r=0.33$ ,  $r=0.29$ ,  $r=0.35$ , all of them with  $p<0.001$ ), suggesting that the three dimensions share variance but are not the same. Practised creativity correlated positively with scanning and search ( $r=0.15$ ,  $p<0.01$ ) and association and connection ( $r=0.24$ ,  $p<0.01$ ), but negatively with evaluation and judgment ( $r=-0.16$ ,  $p<0.05$ ). Finally, creative potential correlated positively with scanning and search ( $r=0.21$ ,  $p<0.01$ ) and association and connection ( $r=0.31$ ,  $p<0.01$ ), but negatively with evaluation and judgment ( $r=-0.14$ ,  $p<0.05$ ).

Variables	M (SD)	1	2	3	4	5	6	7	8
1. Age	32.5 (3.51)	-							
2. Job complexity	3.88 (0.72)	0.02	0.75						
3. Creative potential	3.61 (0.44)	-0.06	0.11*	0.81					
4. Practised creativity	3.22 (0.82)	0.02*	0.22**	0.28***	0.71				
5. Support for creativity	3.55 (0.80)	0.01	0.07	0.10**	0.19**	0.72			
6. Scanning	4.03 (0.23)	0.12**	0.08	0.21**	0.15**	0.08**	0.84		
7. Association	3.59 (0.39)	0.09	0.14*	0.31**	0.24**	0.11**	0.33***	0.80	
8. Evaluation	3.46 (0.65)	0.01	0.04	-0.14*	-0.16*	0.13**	0.29***	0.35***	0.77

\* $p<0.05$ ; \*\* $p<0.01$ ; \*\*\* $p<0.001$

### Test of Hypotheses

Tables 3 to 6 present the results of the moderated mediation analyses. Hypotheses were tested using hierarchical regression analysis. The variance inflation factors (VIF-test) were calculated for all variables. All VIF-tests were lower than the critical value of 10, which indicates that multicollinearity was not a problem in the regression performed (Aiken & West, 1991).



	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
Age	0.06	0.09	0.12	0.06
Job complexity	0.10*	0.13*	-0.05*	0.06*
Creative potential		0.29***	0.42***	0.31***
Support for creativity			0.11**	0.08**
Creative potential X support for creativity				0.35**
R <sup>2</sup>	0.08	0.17	0.21	0.24
Adj. R <sup>2</sup>	0.06	0.14	0.19	0.23
F	2.1*	3.5**	4.2**	7.3**

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Age	0.02	0.04	0.01	0.02	0.00	0.00
Job complexity	0.14*	0.09*	0.11*	0.10*	0.07*	0.06*
Creative potential		0.22***	0.28** *	0.20***	0.22***	0.18
Support for creativity			0.12**	0.09**	0.10**	0.11**
Creative potential X support for creativity				0.25**	0.16**	0.14
Practised creativity					0.28**	0.23**
Practised creativity X support for creativity						0.35**
R <sup>2</sup>	0.14	0.16	0.21	0.24	0.26	0.26
Adj. R <sup>2</sup>	0.12	0.14	0.19	0.22	0.22	0.23
F	1.5*	4.1**	6.8**	8.6**	9.9**	11.3**

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Age	0.08	0.05	0.04	0.07	0.11	0.10
Job complexity	0.07*	0.08*	0.07*	0.06*	0.05*	0.08*
Creative potential		0.18***	0.21**	0.22**	0.16**	0.23*
Support for creativity			0.14*	0.10*	0.09*	0.11*
Creative potential X support for creativity				0.31*	0.13*	0.09*
Practised creativity					0.15*	0.19*
Practised creativity X support for creativity						0.21*
R <sup>2</sup>	0.09	0.14	0.17	0.20	0.21	0.22
Adj. R <sup>2</sup>	0.06	0.11	0.15	0.19	0.19	0.20
F	0.9*	3.6**	4.8*	8.1*	10.3*	12.6*

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>
Age	0.02	0.03	0.01	0.00	0.00	0.00
Job complexity	0.10	0.13	0.09	0.14	0.07	0.10
Creative potential		0.12*	0.08*	0.09*	0.11*	0.07*
Support for creativity			0.15	0.19	0.22	0.12
Creative potential X support for creativity				0.15	0.10	0.13
Practised creativity					0.25	0.28
Practised creativity X support for creativity						0.20
R <sup>2</sup>	0.11	0.13	0.14	0.16	0.17	0.17
Adj. R <sup>2</sup>	0.05	0.09	0.11	0.13	0.14	0.14
F	1.5	2.3*	2.5*	4.4	6.0	8.4

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Hypothesis 1 proposed that employees' creative potential is positively related to their practised creativity. As shown in Model 2 of Table 3, the coefficient associated with this term was statistically significant ( $p=0.29$ ,  $p<0.001$ ) and therefore H1 is accepted. H2a predicted that employees' practised creativity is positively related to their level of scanning and search dimension. Model 5 of Table 4 shows that the coefficient associated with this regression was statistically significant ( $p=0.28$ ,  $p<0.01$ ); therefore, H2a is accepted.

H2b predicted that employees' practised creativity is positively related to their level of association and connection dimension. Model 5 of Table 5 shows that the coefficient associated with this regression was statistically significant ( $p=0.15$ ,  $p<0.05$ ) and H2b is accepted. Finally, H2c predicted that employees' practised creativity is positively related to their level of evaluation and judgment dimension. As shown in Model 5 of Table 6, the coefficient associated with this term was statistically non-significant ( $p=0.25$ ,  $p>0.05$ ); therefore H2c is rejected.

This study predicted that support for creativity would moderate the relationship between employees' creative potential and their level of practised creativity (H3). As shown in Model 4 of Table 3, the results support H3 ( $p=0.35$ ,  $p<0.01$ ).

Hypotheses 4a, 4b and 4c proposed a moderating effect of support for creativity on the relationship between employees' practised creativity and each dimension of entrepreneurial alertness. Results show support for H4a (Model 6 of Table 4) with an interaction coefficient of 0.35 ( $p<0.01$ ) and for H4b (Model 6 of Table 5) with an interaction coefficient of 0.21 ( $p<0.05$ ). However, results do not show support for H4c (Model 6 of Table 6) because the coefficient associated with this interaction was statistically non-significant ( $p=0.20$ ,  $p>0.05$ ).

### **Mediating Role of Practised Creativity**

To test the proposal that support-moderated practised creativity mediates the relationship between creative potential and entrepreneurial alertness, this study followed Baron and Kenny's (1986) work. According to these authors, a variable's mediation must meet three conditions. First, the independent variable is a significant predictor of both the dependent and mediator variables. Second, the mediator variable is a significant predictor of the dependent variable. Third, the effects of the independent variable on the dependent variable are reduced when the mediator variable is added to the regression model.

The mediation analysis was only on the scanning and searches, as well as association and connection dimensions, because H2c and H4c were rejected. In relation to the scanning and search dimension, first and as shown in Model 4 of Table 4, support-moderated creative potential was significantly related to the scanning and search dimension ( $p=0.25$ ,  $p<0.01$ ). Further, shown in Table 3, a significant relationship exists between support-moderated creative potential and practised creativity ( $p=0.35$ ,  $p<0.01$ ). Second, support-moderated practised creativity is significantly associated with the scanning and search dimension ( $p=0.35$ ,  $p<0.01$ ), as indicated in Model 6 of Table 4. Finally, as shown in Models 4 and 6 in Table 4, the coefficient for the support-moderated effects of creative potential on the scanning and search dimension became insignificant when the support-moderated effects of practised creativity were included in the regression equation. The coefficient decreased from 0.25 ( $p<0.01$  in Model 4) to 0.14 ( $p>0.05$  in Model 6). Thus and according to Baron and Kenny (1986), support-moderated practised creativity fully mediates the positive relationship between support-moderated creative potential and the scanning and search dimension of entrepreneurial alertness.

The analysis for the association and connection dimension is as follows. First, support-moderated creative potential was significantly related to the association and connection dimension ( $p=0.31$ ,  $p<0.05$ ; Table 5, Model 4), as well as practised creativity ( $p=0.35$ ,  $p<0.01$ ; Table 3, Model 4). Second, support-moderated practised creativity is significantly associated with the association and connection dimension ( $p=0.21$ ,  $p<0.01$ ) as indicated in Model 6 of Table 5. Finally, as shown in Models 4 and 6 in Table 5, the coefficient for the support-moderated effects of creative potential on the association and connection dimension became reduced when the support-moderated effects of practised creativity were included in the regression equation. The coefficient decreased from 0.31 ( $p<0.05$  in Model 4) to 0.09 ( $p<0.05$  in Model 6). Thus and according to Baron and Kenny (1986), support-moderated practised creativity partially mediates the positive relationship between support-moderated creative potential and the association and connection dimension of entrepreneurial alertness because the effect of the independent variable is reduced but remains significant.

## DISCUSSION

### Key Findings and Contributions

The results of this study provide empirical evidence of the relationship between two overlooked aspects of creativity, creative potential and practised creativity, as well as their relationships with entrepreneurial alertness. Both creative potential and practised creativity were chosen based on previous studies which indicated that this differentiation may be useful for identifying untapped creative resources in competitive organizations (e.g. DiLiello & Houghton, 2008). Further, creativity has been considered an indispensable component in entrepreneurial alertness (e.g. Kirzner, 2009; Tang & Murphy, 2012).

Results indicate that employees' creative potential is significantly related to their practised creativity, which is consistent with previous studies (Caniëls & Rietzschel, 2015; DiLiello & Houghton, 2008; Houghton & DiLiello, 2010). Also, practised creativity was found to be significantly related to two dimensions of entrepreneurial alertness (scanning and search; association and connection). In other words, practised creativity was found to mediate the relationship between employees' creative potential and their entrepreneurial alertness. These results suggest that employees with strong creative potential are more likely to actually practice creativity when they recognize opportunities. However, in keeping with Baer (2012), the lack of

support for the relationship between practised creativity and the evaluation and judgment dimension of entrepreneurial alertness (i.e., H2c was not supported) suggests a significant reduction in the likelihood that creative ideas will be implemented.

The study also showed that the relationships between creative potential and practised creativity and practised creativity and entrepreneurial alertness were moderated by support for creativity. That is, both relationships were stronger when support for creativity was combined, respectively, with creative potential and practised creativity, which is consistent with previous research (e.g. Amabile et al., 1996; Tierney & Farmer, 2004 & 2011). With respect to the relationship between creative potential and practised creativity, it was reasonably expected based on previous research (e.g. Madjar et al., 2002), that when the social environment provides support for creativity from supervisors and co-workers, employees would persist in their creative efforts. Turning to the relationship between practised creativity and entrepreneurial alertness, it was expected that employees exhibited more entrepreneurial behaviour when they experimented with ideas and received the support needed to further explore and refine their ideas (e.g. Rigolizzo & Amabile, 2015). However, a more detailed analysis is needed to examine the effects of interaction between practised creativity and support for creativity on each dimension of entrepreneurial alertness.

According to the results, practised creativity was significantly related to both scanning and search and association and connection dimensions of entrepreneurial alertness, but not with the evaluation and judgment dimension, even including the moderating effect of support for creativity. One possible explanation for these results is that employees are in the creative facet of alertness, but not in the entrepreneurial facet. According to McMullen and Shepherd (2006), alertness is not entrepreneurial unless it involves judgment and a movement toward action. Tang et al. (2012) considered that scanning and search and association and connection dimensions involve pre-existing knowledge, preparedness and how individuals cognitively respond to and process new information clues. However, the evaluation and judgment dimensions imply that employees evolve from the cues, gathered information and evaluations and decide if they want to reflect on an opportunity that benefits the organization. That is, the results obtained show that the interaction between social environment (i.e., support for creativity) and a creative mind-set might not be sufficient to develop employees' insight into the value of specific information that others are overlooking and whether or not an opportunity exists.

### **Theoretical Implications**

The findings have some implications for the creativity and entrepreneurship literature. First, they confirm that creative potential and practised creativity are significantly correlated, but they capture different aspects of individuals' creativity. Also, to date, only a small number of studies have analysed this differentiation (e.g. Caniëls & Rietzschel, 2015; DiLiello & Houghton, 2008). The findings help to clarify the influence of creative potential and practised creativity on recognition of opportunities, as it was analysed in this study through the concept of entrepreneurial alertness. Second, the findings answered Tang et al.'s (2012) call for validation of their new three-dimensional entrepreneurial alertness scale and investigation of a number of antecedent variables. In the context of this research, each dimension of alertness had different relationships with creative potential and practised creativity. Finally, the present study could extend the implications to the realm of firm-level innovation, suggesting that the innovative activity of the firms cannot be properly understood without considering the simultaneous influence of individuals who are creative and alert to business ideas.

## Practical Implications

The results have some interesting practical implications. First, work environments should be such that employees at all levels care about creativity and developing new ideas. Managers should find new ways of gathering and assimilating relevant information about the firm's activity and structure the organization so that it facilitates cooperation among individuals and groups and stimulates learning from failure (Rigolizzo & Amabile, 2015). Thus, if managers are interested in boosting creativity and the recognition of opportunities, they need to establish a system for acknowledging and rewarding employees' efforts to avoid apathy. Next, managers should support the "small wins" (Amabile & Kramer, 2011) of employees who are willing to become internal entrepreneurs to be more alert to specific information in the environment by actively recognizing elements of ideas that could be applied to the end product (Baron & Ensley, 2006), even if an idea as a whole must be abandoned.

## Limitations and Future Research

This study has some limitations. First, the sample only included middle-managers from medium and large firms and it is not clear that these results can be generally applied to other types of employees. Future research could test the ideas developed in this study in different samples and settings. Second, this study was focused on the influence of a specific type of support: Support for creativity from supervisors and co-workers. It is not clear whether the results are applicable other types of support (e.g. support from family and friends). Future research may address this issue by exploring relationships between the constructs considered in this study and measures of other types of support. Third, according to Madjar et al. (2002), support influences mood states that, in turn, affect creativity. Yet this study obtained only one employees' rating of support for creativity, so it is theoretically possible that respondents in positive moods had perceived more on-going support from others. Future research should address this issue by including objective indicators of moods (e.g. Baron, 2008; Cardon, Wincent, Singh & Drnovsek, 2009) Finally, although the results indicated that practised creativity mediated the relationship between creative potential and two dimensions of entrepreneurial alertness, creative potential may also influence alertness through other mechanisms not investigated here. Future research should investigate the role of other potential mediators of the relationship between creative potential and entrepreneurial alertness.

## CONCLUSION

The findings of this study support the importance of creative potential and practised creativity in the creativity process and suggest that support for creativity from supervisors and co-workers helps individuals to recognize opportunities in early stages of development. This study helps to understand the complex antecedents of innovation through the nexus between creativity and entrepreneurial alertness. It is hoped that the results of this study will be useful for fellow researchers, particularly in the areas of creativity and entrepreneurship.

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