Journal of Business Research 67 (2014) 200–210

Contents lists available at ScienceDirect

Journal of Business Research

Hope and positive affect mediating the authentic leadership and creativity relationship ☆

Arménio Rego [a,b,*], Filipa Sousa [c,1], Carla Marques [d,2], Miguel Pina e Cunha [e,3]

[a] Departamento de Economia, Gestão e Engenharia Industrial, Universidade de Aveiro, 3810-193 Aveiro, Portugal
[b] UNIDE, Instituto Universitário de Lisboa (ISCTE-IUL), Av.ª das Forças Armadas, 1649-026 Lisboa, Portugal
[c] Escola Superior de Educação e Ciências Sociais, Instituto Politécnico de Leiria, Morro do Lena, Alto do Vieiro, 2411-901 Leiria, Portugal
[d] Departamento de Economia, Sociologia e Gestão, Universidade de Trás-os-Montes e Alto Douro, Av. Almeida de Lucena, 1, 5000-660 Vila Real, Portugal
[e] NOVA School of Business and Economics, Rua Marquês de Fronteira, 20, 1099-038 Lisboa, Portugal

ARTICLE INFO

Article history:
Received 1 October 2010
Received in revised form 1 July 2011
Accepted 1 October 2012
Available online 7 November 2012

Keywords:
Authentic leadership
Positive affect
Hope
Creativity

ABSTRACT

The study analyzes how authentic leadership (AL) predicts employees' creativity both directly and through the mediating role of employees' positive affect and hope. Two hundred and three employees working in Portuguese retail organizations participate in the research. Employees report their hope and positive affective states, as well as the AL of their supervisors. Supervisors report the employees' creativity. The main findings are: (a) AL predicts employees' creativity, both directly and through the mediating role of employees' hope; (b) AL also predicts employees' positive affect, which in turn predicts employees' hope and, thus, creativity. The study enriches the understanding of the processes through which AL improves employees' creativity, and provides valuable insights for both scholars and practitioners. By promoting AL, and employees' hope and positive affect, organizations may increase employees' creative performance, creativity being an important path to organizational performance.

1. Introduction

Global competition, economic uncertainty, and rapid technological change make creativity, the "cornerstone of innovation" (Klijn & Tomic, 2010, p. 322), a crucial organizational resource and a path to organizational performance and survival (Reiter-Palmon & Illies, 2004; Shalley & Gilson, 2004; Zhang & Bartol, 2010). Creativity in the workplace is the production of *novel* and *useful* ideas or solutions concerning products, services, processes, and procedures (Amabile, 1997; Oldham & Cummings, 1996; Zhou & George, 2001, 2003; Zhou & Ren, 2012). Zhou and Ren (2012) state: "from top executives to rank-and-file employees, and working in different functional areas, from research labs to the manufacturing floor, all have the potential to be creative." By promoting their employees' creative performance, organizations are more able to solve problems and take advantage of business opportunities, to adapt to changing customer needs, to competitively innovate, and to improve organizational effectiveness (Amabile, 1997; Merlo, Bell, Mengüç, & Whitwell, 2006; Reiter-Palmon & Illies, 2004; Zhou & Ren, 2012). Thus, organizations need not only identify and select creative employees (i.e., individuals with personal attributes that make them more creative), but also create contextual conditions that facilitate or promote creativity. Leadership is one such condition.

Several researchers focus on identifying the role of specific leadership behaviors and leader characteristics in supporting, suppressing, facilitating, or inhibiting creativity. These behaviors/characteristics include transformational leadership (Shin & Zhou, 2003), emotional intelligence (Rego, Sousa, Cunha, Correia, & Saur, 2007), empowering leadership (Zhang & Bartol, 2010), benevolent leadership (Wang & Cheng, 2010), close monitoring (Zhou, 2003), developmental feedback (Zhou, 2003), supportive supervision (Oldham & Cummings, 1996), unconventional leader behavior (Jaussi & Dionne, 2003), and noncontrolling supervision (Oldham & Cummings, 1996). This paper focuses on authentic leadership (AL). AL is "a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers,

☆ The authors are grateful to Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa for their permission to use the Authentic Leadership Questionnaire. They are also grateful to both reviewers for their helpful comments and recommendations. Miguel Cunha acknowledges support from Nova Forum. This paper is part of FCT project PT DC/EGE-GES/109925/20.

* Corresponding author at: Departamento de Economia, Gestão e Engenharia Industrial, Universidade de Aveiro, 3810-193 Aveiro, Portugal. Tel.: +351 234 370 024; fax: +351 234 370 215.
E-mail addresses: armenio.rego@ua.pt (A. Rego), msousa@esel.ipleiria.pt (F. Sousa), smarques@utad.pt (C. Marques), mpc@novasbe.pt (M. Pina e Cunha).
[1] Tel.: +351 244 820 300; fax: +351 244 820 310.
[2] Tel.: +351 259 302 200; fax: +351 259 302 249.
[3] Tel.: +351 212 822 725; fax: +351 213 873 973.

0148-2963/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jbusres.2012.10.003

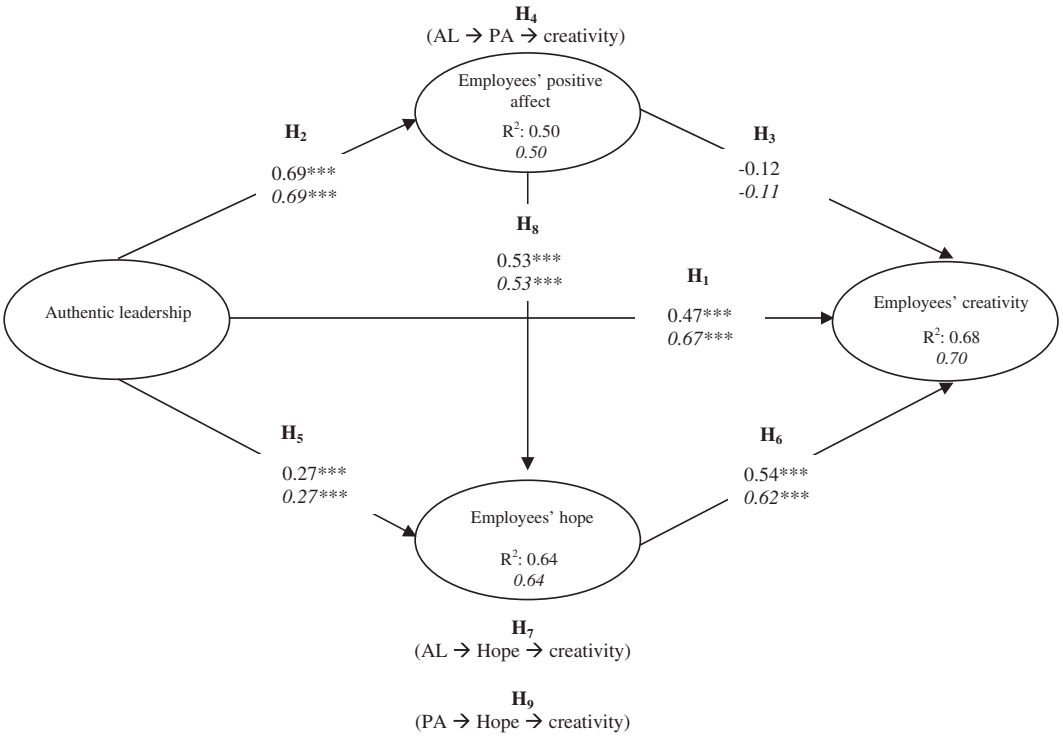
fostering positive self-development" (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008, p. 94).

Although AL receives considerable theoretical support, more empirical research is necessary to understand the mechanisms through which authentic leaders influence effective employees' behaviors (Avolio & Mhatre, 2012; Gardner, Cogliser, Davis, & Dickens, 2011). Creativity is one these effective behaviors, but very few empirical studies (Rego, Sousa, Marques, & Cunha, 2012a) focus on the relationship between AL and employees' creativity. A recent review of the organizational creativity literature by Zhou and Ren (2012) makes no reference to AL. And recent reviews of AL literature (Avolio & Mhatre, 2012; Gardner et al., 2011) make no mention of employees' creativity. This gap between the literatures is worth filling in for at least four interrelated reasons.

First, as the paper mentions above, creative performance is crucial for employees' effective performance, while also being a path to organizational innovation, competitiveness, and performance (Reiter-Palmon & Illies, 2004; Shalley & Gilson, 2004; Zhang & Bartol, 2010). Second, the apparent degradation in the quality of the "overall moral fabric of contemporary leadership" (Avolio & Mhatre, 2012, pp. 773–774) creates a need for new theories that, like AL, focus on promoting what is right rather than focusing only on short-run profits without ethical considerations. That is to say, exemplary/authentic leadership behaviors that help to restore trust in leaders and in/within organizations (Avolio & Mhatre, 2012; George, 2003) may also promote creativity. Third, employees' creativity is a potential outcome of AL because creativity represents, to a certain degree, a route through which employees may express their own authenticity (Edmondson, 1999; Michie & Gooty, 2005), literature suggesting that leaders' authenticity "reverberates" on followers' authenticity (Gardner, Avolio, Luthans, May, & Walumbwa, 2005).

Fourth, concepts like authenticity and virtuousness have been "out of favor in the scientific community" (Cameron, Bright, & Caza, 2004, p. 2) and out of the focus of practitioner's attention (Rego, Ribeiro, & Cunha, 2010). Although scholars themselves start putting such topics back on the table, more empirical research is necessary for "legitimatizing" them, in both the scholarly and practitioner communities (Cameron & Winn, 2012). Without (empirically demonstrated) "pragmatic outcomes" (Cameron et al., 2004, p. 5) AL is less likely to capture attention in either community. In summary, in times of a crisis of confidence in corporations (Avolio & Mhatre, 2012; George, 2003) studying and promoting AL are crucial: beyond stimulating confidence in businesses, such leadership behaviors are able to promote "pragmatic outcomes", and employees' creativity (a kind of "soft criterion" of performance; Yammarino, Dionne, Schriesheim, & Dansereau, 2008) is one of these outcomes.

With these ideas in mind, this study hypothesizes (Fig. 1) that (a) AL predicts employees' creativity through the mediating role of employees'



***p<0.001

RMSEA: 0.08; GFI: 0.99; AGFI: 0.94; CFI: 0.99; IFI: 0.99.

Notes:

(a) Standardized path coefficients are shown over the arrows. Values in italics correspond to a model that controls for the impact of the common method variance factor.

(b) Paths referring to the control variables (including the common method variance factor) are not shown.

Fig. 1. Testing the hypothesized model through structural equation modeling.

positive affect; (b) AL also predicts employees' creativity via the mediating role of hope, (c) employees' hope and positive affect are partial mediators because mechanisms other than hope and positive affect likely mediate the relationship between AL and employees' creativity; and (d) employees' hope mediates the relationship between their positive affect and creativity.

The paper answers to a call of Avolio and Mhatre (2012), who recommend that future research explores a broader range of mediating mechanisms through which AL impacts positively on performance outcomes. Considering that Rego et al. (2012a) show that AL predicts creativity both directly and through the mediating role of psychological capital (hope being a dimension of the psychological capital construct; Luthans, Youssef, & Avolio, 2007), the most valuable contribution of this paper is from the construct of positive affect. Despite the increased attention on factors that may stimulate or hinder creativity in organizations (Zhou & Ren, 2012), Amabile, Barsade, Mueller, and Staw (2005, p. 389) argue that "[s]cholars are still in the early stages of mapping the affect–creativity relationships in organizations." Another important contribution is that the study expands the nomological network for AL (Gardner et al., 2011).

2. Theory and hypotheses

2.1. The AL construct

The AL construct comprises four dimensions: (1) *Self-awareness* means that the leader understands how (s)he derives and makes meaning of the world and is aware of his or her strengths, limitations, how others see him or her, and how (s)he impacts others (Walumbwa et al., 2008); (2) *Balanced processing* means that the leader objectively analyzes the relevant data before coming to a decision and solicits views that challenge deeply held positions (Gardner et al., 2005; Walumbwa et al., 2008); (3) *Internalized moral perspective* means that the leader sets a high standard for moral and ethical conduct, guides actions by internal moral standards and values (versus group, organizational, and societal pressures), and expresses decision making and behavior consistent with such internalized values (Avolio & Gardner, 2005; Gardner et al., 2005; Walumbwa et al., 2008); and (4) *Relational transparency* means that the leader presents his/her authentic self to others, openly shares information, and expresses his/her true thoughts and feelings, reinforcing a level of openness with others that provides them with an opportunity to be free with their ideas, challenges, and opinions. Empirical and theoretical evidence (e.g., Gardner et al., 2005; Rego et al., 2012a; Walumbwa, Wang, Wang, Schaubroeck, & Avolio, 2010; Walumbwa et al., 2008) suggests that a core AL factor may emerge from the relationships among the four dimensions.

Walumbwa et al. (2008) present several differences between AL theory and transformational and ethical theories. Empirical research (Walumbwa, Luthans, Avey, & Oke, 2011; Walumbwa et al., 2008) finds incremental validity of AL beyond ethical and transformational leadership. Avolio and Gardner (2005) also suggest several differences between AL theory and transformational, charismatic, servant, and spiritual leadership theories. AL is also different from benevolent (Wang & Cheng, 2010) and empowering leadership (Zhang & Bartol, 2010). Although some overlap exists between AL and other leadership theories, AL has unique components. Some authors (Avolio & Gardner, 2005; Avolio & Mhatre, 2012) argue that AL represents a *root construct* underlying other positive forms of leadership. Empirical studies of the incremental validity of AL beyond other leadership constructs would be of interest. This study does not include any other leadership constructs because some participating organizations requested the application of a short survey. The absence of such leadership constructs limits the validity of the study, but the empirical findings are important enough to justify the presentation of the current results to the research community.

2.2. Authentic leadership predicting employees' creativity

Perceptions of psychological safety (Edmondson, 1999) and intrinsic motivation (Ryan & Deci, 2000) help to support our hypothesis that AL predicts employees' creativity: authentic leaders promote employees' perceptions of psychological safety and their intrinsic motivation, which in turn make them more creative. Psychological safety refers to how individuals believe that the team or organizational context is safe for interpersonal risk-taking (Edmondson, 1999). Elsbach and Hargadon (2006, p. 476) argue that "research on psychological safety suggests that feeling that one may be oneself without fear of image threats may motivate workers to freely engage in innovative and playful behavior at work." By being transparent with employees, guided by internal ethical standards, and able to objectively analyze relevant data (including employees' dissenting and/or idiosyncratic opinions and proposals) before making decisions, authentic leaders promote employees' trust, respect, and identification (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Gardner et al., 2005; Ilies, Morgeson, & Nahrgang, 2005; Walumbwa et al., 2008). Trust, respect, and identification lead employees to experience greater psychological safety, thus feeling free to take risks, to propose unconventional ideas, and to introduce conflicting opinions without fear (Avolio et al., 2004; Edmondson, 1999; Walumbwa et al., 2010). As a consequence, employees tend to be more creative in facing problems and opportunities.

Intrinsic motivation reflects "an inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (Ryan & Deci, 2000, p. 70), and literature suggests that intrinsic motivation ignites creativity (Zhou & Ren, 2012). Employees' intrinsic motivation nurtures creativity because intrinsically motivated employees are (a) more curious and learning oriented, (b) cognitively flexible, (c) willing to take risks, and (d) persistent when facing challenges, obstacles, and opportunities (Amabile, 1997; Oldham & Cummings, 1996; Tierney, Farmer, & Graen, 1999; Zhou, 2003; Zhou & Ren, 2012). Considering that literature (Ilies et al., 2005) suggests that authentic leaders make their employees more intrinsically motivated (by supporting their self-determination), the first hypothesis follows:

H1. AL relates positively to employees' creativity.

2.3. Positive affect mediating the relationship between AL and creativity

AL also influences employees' creativity through mechanisms not in the above discussion. One such mechanism is the employees' positive affect ("a pleasant feeling state or good mood"; Estrada, Isen, & Young, 1994, p. 286): AL leads employees to experience positive affect, which can make them more creative.

Researchers stress the importance of affect in the leadership process (e.g., Ashkanasy & Tse, 2000; Michie & Gooty, 2005), some of them suggesting that AL enhances employees' positive affect (Avolio & Mhatre, 2012; Avolio et al., 2004; Walumbwa et al., 2008). Emotional contagion is a possible mechanism through which authentic leaders cultivate employee positive affect. Emotional contagion is a process of social influence (Barsade, 2002) in which a person or group influences the affective states or behaviors of another person or group through the conscious or unconscious induction of affective states and behavioral attitudes (Schoenewolf, 1990). Ilies et al. (2005, p. 384) note: "if authentic leaders experience more positive affective states (through self-awareness and relational orientation; Kernis, 2003) than inauthentic leaders, through emotional contagion, their followers will experience more positive affective states, compared to followers of inauthentic leaders."

AL also promotes positive interpersonal relationships between leaders and employees, and between employees (Gardner et al., 2011; Ilies et al., 2005; Walumbwa et al., 2008), these positive relationships being a source of positive affect (Haller & Hadler, 2006;

Stephens, Heaphy, & Dutton, 2012). The second hypothesis follows from this discussion:

H2. AL relates positively with employees' positive affect.

In order to consider whether or not AL predicts employees' creativity through the mediating role of employees' positive affect, one must hypothesize arguments that positive affect relates to creativity. As the broaden-and-build theory (Fredrickson, 2001) suggests, positive affect can *broaden* the employees' scope of attention (increasing the number of cognitive elements available for association) and the scope of cognition (increasing the breadth of those elements relevant to the problem), thus increasing the probability of finding creative activities (Fredrickson, 2001; Fredrickson & Branigan, 2005; Rego, Sousa, Marques, & Cunha, 2012b; Wright & Cropanzano, 2004). Miller (1997, p. 254) provides a physiological explanation for the relationship between positive affect and creativity: "research has revealed that chemicals such as endorphins, epinephrine and adrenalin are released in the body when individuals are having fun. That increases their energy and sense of well-being. It opens pathways to more creative thinking and decision making, higher self-esteem and better performance."

Positive affect also promotes social bonds/connectivity among employees, thus making individuals build expansive emotional states that open possibilities for creativity, in turn leading them to try new things (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005; Stephens et al., 2012). From these arguments, the study advances the following hypothesis:

H3. Employees' positive affect relates positively with their creativity.

Considering that AL relates to employees' positive affect, and that employees' positive affect relates to their creativity, the study suggests that authentic leaders feed employee creativity because employees experience positive affect, thus being more creative. However, positive affect is just one mediating mechanism among others (e.g., employees' psychological safety, communication openness, employees' authenticity; see the arguments supporting H_1; see also arguments supporting H_5, H_6, and H_7). Thus, the fourth hypothesis follows from this discussion:

H4. The employees' positive affect partially mediates the relationship between AL and employees' creativity.

2.4. Hope mediating the relationship between AL and creativity

AL also relates with employees' creativity through the mediating role of employees' hope: AL leads employees to experience hope, which can make them more creative. Hope is "a positive motivational state that is based on an interactively derived sense of successful (a) agency (goal-directed energy) and (b) pathways (planning to meet goals)" (Snyder, Irving, & Anderson, 1991, p. 287). In a theoretical framework linking AL to employees' attitudes and behaviors, Avolio et al. (2004) suggest that authentic leaders can play a significant role in promoting employees' hope. Resorting to Snyder's hope theory (e.g., Snyder, 2000), "hope is instilled through prolonged interactions with consistently hopeful and responsive actors" (p. 809), including leaders. Avolio et al. (2004, p. 809) observe: "because authentic leaders have the ability to remain realistically hopeful and trustworthy, such leaders can enhance followers' hope by establishing not only their willpower, but also by including in their comments positive aspects of the waypower or directions to pursue that enhance a follower's sense of self-efficacy."

Considering that authentic leaders are more credible sources of input and feedback for employees, and provide senses of security and trust in them (Gardner et al., 2011; Walumbwa et al., 2008), employees are more able to focus their creative energies on goal related endeavors (i.e., willpower), rather than spending energies on trying to detect whether communications are genuine or not. The pathways' thinking of authentic leaders also reverberates on the employees' waypower, leading employees to see obstacles as opportunities rather than threats, and to look for alternative routes to achieve desired outcomes. When employees see their leaders as authentic, employees also feel freer to expose difficulties and blockages in pursuing goals, and consequently, the possibilities of re-goaling are greater and re-goaling is one of the most important ways for developing hope (Luthans & Youssef, 2004). Hence:

H5. AL relates to employees' hope.

In order to consider whether or not AL predicts employees' creativity through the mediating role of employees' hope, the research must consider how employees' hope relates to their creativity. Creativity "requires some level of internal, sustaining force that pushes individuals to persevere in the face of challenges inherent to creative work" (Shalley & Gilson, 2004, p. 36). Creativity also requires challenging the status quo and a predisposition to accept possible failure (Staw, 1995; Zhou & George, 2003). Considering that according to the theory of hope developed by Snyder (1994, p. 2), hope may be seen as an "empowering way of thinking", one may expect that individuals experiencing greater versus lower hope are more able to face those challenges successfully.

Willpower leads hopeful employees to pursue goals and persevere when goal blockages arise (Snyder, 2000). Waypower leads them to look for alternative pathways when earlier ones are unworkable or impracticable (Snyder, 1994, 2002). Not all alternative pathways are necessarily new/useful, but hopeful people (at least when realizing the ineffectiveness of old/known alternative pathways) look for new/useful ideas and solutions more frequently than do employees lacking hope. Moreover, because hopeful employees enjoy goal pursuit, they are more intrinsically motivated and, as a consequence, tend to look for creative ways when implementing their "agency energy" (Amabile, 1997; Oldham & Cummings, 1996; Shalley & Gilson, 2004; Snyder, 2002; Snyder, Lapointe, Crowson, & Early, 1998; Zhou & Ren, 2012). Hence:

H6. Employees' hope relates positively with their creativity.

Considering that AL relates to employees' hope, and that employees' hope relates to their creativity, the reasoning suggests that authentic leaders feed employees' creativity because employees experience hope, thus being more creative. However, hope is a mediating mechanism among others (e.g., psychological safety, positive affect; see the arguments supporting H_1 through H_4). Thus, the seventh hypothesis follows from this discussion:

H7. Employees' hope partially mediates the relationship between AL and employees' creativity.

2.5. Hope mediating the relationship between positive affect and creativity

Employees' hope may mediate the relationship between their positive affect and creativity because employees experiencing positive affect develop greater hope and are thereby more creative. Following the above arguments relating hope with creativity (see arguments supporting H_6), the argument must now include how employees' positive affect relates to their hope. The broaden-and-build theory (Fredrickson, 2001; Fredrickson & Branigan, 2005) suggests that positive affect builds the individuals' enduring psychological resources. One of these psychological resources is hope. Individuals who experience positive affect tend to interpret failure more as a temporary setback caused by situational, as opposed to individually-based circumstances (Forgas, 1992). Thus, they persistently seek to complete their duties and achieve their goals even when they encounter obstacles and setbacks. With less fear of failing, they continue to look for different pathways for reaching goals and they tend to face problems and opportunities with creative ideas (Wright

& Walton, 2003). In other words, they express greater willpower and waypower. From this discussion, the eighth hypothesis follows:

H8. Employees' positive affect relates positively with their hope.

Considering that employees' hope may relate positively with their creativity (H_6) and that employees' positive affect may relate positively with their hope (H_8), one may hypothesize that employees' hope mediates the relationship between their positive affect and creativity. However, mechanisms other than hope (e.g., intrinsic motivation, perceptions of meaningful work, psychological safety, and trust; Avolio & Gardner, 2005; Avolio et al., 2004; Ilies et al., 2005; Liden, Sparrowe, & Wayne, 1997; see arguments supporting H_3) may explain the relationship between positive affect and creativity. Hence:

H9. Employees' hope partially mediates the relationship between their positive affect and creativity.

3. Method

3.1. Sample and procedures

Two hundred and nineteen employees working in 37 retail organizations (average size: 773 employees; SD: 804; range: 120–3200) operating in Portugal, participate in the study. All participants are shop assistants, working under a supervisor. Organizations operate in several sectors (e.g., food, clothing, appliances, sports, toys, footwear, and office materials, furniture, and equipment). After obtaining permission from the organizations' leaders, the researchers approach the employees in their workplaces. Individuals report their supervisors' AL and their own positive affect and hope. After collecting the employee's answers, the researcher asks the respective supervisor to rate the employee's creativity at work. Two hundred and nineteen supervisors participate in the study (59.4% female; mean age is 32.1 years, SD being 3.8; mean tenure is 6.1 years, SD being 3.6; 2.7% with nine or fewer years of schooling, 23.3% with 10 to 12 years, and 74% with at least an undergraduate degree). Shalley and Gilson (2004, p. 35) argue that "managers play a key role in that they are often the individuals best suited to make the determination of whether an employee's outcome should be regarded as creative." When objective measures of employees' creativity are not available, supervisors appear to be the most appropriate raters (Zhou & Ren, 2012). Collecting data about dependent and independent/mediating variables from different sources is also important to reduce common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Subordinates and supervisors fill in their questionnaires in separate locations. Participants deliver responses under sealed cover directly to the researchers. To reduce common method biases (Podsakoff et al., 2003), the study takes other measures: (a) individuals are assured that no right or wrong answers exist and; (b) the study uses different scale endpoints, formats, and ranges for the positive affect and hope measures (see the next sub-section).

Employees also report age, gender, organizational tenure, schooling years, and the length of the supervisor–employee working relationship. Studies suggest that employees' age, tenure, education, and gender relate to creativity (Furnham & Nederstrom, 2010; George & Zhou, 2007; Rego, Machado, Leal, & Cunha, 2009; Tierney et al., 1999). The length of the supervisor–employee working relationship may interfere, or reflect, the quality of the leader-member exchange, thus influencing (a) how supervisors and employees behave toward, and/or describe, each other, and (b) employees' creative performance (Atwater & Carmeli, 2009; Tierney et al., 1999). 68.0% of participants are female; mean age is 27.0 years (standard deviation: 4.2); and mean organizational tenure is 3.6 years (SD: 2.2). 5.0% of the individuals have nine or fewer years of schooling, 39.3% have between 10 and 12 years, and 55.7% have at least an undergraduate degree. The mean length of the supervisor–employee working relationship is 3.0 years (SD: 1.9).

3.2. Authentic leadership measurement

The study measures AL with the 16 five-point items (Portuguese version; Rego et al., 2012a) from the Authentic Leadership Questionnaire (Copyright © 2007; by Bruce J. Avolio, William L. Gardner, and Fred O. Walumbwa). ALQ measures the four AL dimensions mentioned above. Sample items are: (a) seeks feedback to improve interactions with others (self-awareness); (b) says exactly what he or she means (relational transparency); (c) demonstrates beliefs that are consistent with actions (internalized moral perspective); and (d) listens carefully to different points of view before coming to conclusions (balanced processing). Individuals report the frequency (0: not at all; 4: frequently, if not always) with which their supervisors revealed the 16 behaviors over the last three months.

Confirmatory factor analysis (maximum likelihood estimation method) tests the four-factor model (Table 1). Although some fit indices are satisfactory (e.g., CFI: 0.94; IFI: 0.94), others are not (e.g., RMSEA: 0.10; GFI: 0.85). After using standardized residuals and modification indices for locating sources of misspecification, the study removes two items (one regarding internalized moral perspective and another regarding self-awareness). Fit indices are satisfactory (e.g., RMSEA: 0.07; GFI: 0.91; Table 1). For assessing the impact of removing items, the study computes the correlations between the scores resulting from the original items and the scores produced by the final items (Stanton, Sinar, Balzer, & Smith, 2002). Correlations are 0.99 for both self-awareness and internalized moral perspective. Reliabilities emerging from the original and the reduced-length scale are also similar (Table 1). The correlations between (a) the scores from the original scale versus the scores from the reduced-length scale, and (b) hope, positive affect, and creativity are very similar, the differences being not higher than 0.02. For example, the correlation between internalized moral perspective and creativity is 0.74 (final items) against 0.73 (original items). The correlation between self-awareness and creativity is 0.73 (final items) against 0.74 (original items). These findings suggest that item removal is not problematic for the scale's validity.

A second-order factor model tests if the four AL dimensions load onto a higher AL factor (Table 1). Comparison of the first- and second-order models shows no significant change in χ^2 relative to the difference in degrees of freedom ($\Delta\chi^2_{(2)} = 2.26$; $p = 0.32$). The study also tests a single-factor model (all 14 items loading onto a single factor model), the fit indices being unsatisfactory (e.g., RMSEA: 0.12; GFI: 0.83). Considering these findings and the results of the usefulness analysis (see below), the study uses the second-order factor model for testing hypotheses. To obtain a composite AL score: (1) the study averages the items for each of the four subscales to arrive at a composite average for each subscale; (2) then, the study averages the averages for each of the four subscales. Cronbach Alpha is 0.94. The correlation between AL as measured with the original items and AL as measured by the final items is 0.998. Cronbach Alpha of AL as measured with the final items is 0.94 (Table 1), a score very similar to the reliability emerging from the original items (0.95). The correlations between (a) AL and (b) hope, positive affect, and creativity are, respectively, 0.68 (final items) against 0.67 (original items), 0.68 in both conditions, and 0.75 in both conditions. These findings also suggest that the items' removal is not problematic for the scale's validity.

3.3. Employees' positive affect measurement

The study uses three items for measuring positive affect: individuals indicate how often they felt "happy", "enthusiastic", and "excited" over the last three months (Turban, Stevens, & Lee, 2009), through a 7-point scale, ranging from never (1) to always (7). This focus on the

Table 1
Authentic leadership: confirmatory factor analysis (completely standardized solution).

	1st order factor model (original scale)		1st order factor model (reduced length-scale)		2nd order factor model (reduced length-scale)	
	Lambdas	Cronbach alphas	Lambdas	Cronbach alphas	Lambdas	Cronbach alphas
Relational transparency		0.92		0.92		0.92
Item # 1	0.87		0.86		0.87	
Item # 2	0.89		0.89		0.89	
Item # 3	0.81		0.81		0.81	
Item # 4	0.79		0.79		0.79	
Item # 5	0.77		0.77		0.77	
Internalized moral perspective		0.91		0.88		0.88
Item # 6	0.87		0.86		0.86	
Item # 7	0.91					
Item # 8	0.82		0.82		0.82	
Item # 9	0.81		0.85		0.85	
Balanced processing		0.86		0.86		0.86
Item # 10	0.73		0.73		0.74	
Item # 11	0.90		0.90		0.90	
Item # 12	0.87		0.87		0.87	
Self-awareness		0.93		0.94		0.94
Item # 13	0.82					
Item # 14	0.90		0.92		0.92	
Item # 15	0.90		0.90		0.91	
Item # 16	0.91		0.91		0.91	
Authentic leadership						0.94
Relational transparency					0.95	
Internalized moral perspective					0.95	
Balanced processing					0.92	
Self-awareness					0.96	
Fit indices						
Chi-square	300.64		151.04		153.30	
Degrees of freedom	98		71		73	
Chi-square/degrees of freedom	3.1		2.1		2.1	
Root mean square error of approximation	0.097		0.072		0.071	
Goodness of fit index	0.85		0.91		0.91	
Adjusted goodness of fit index	0.80		0.87		0.87	
Comparative fit index	0.94		0.97		0.97	
Incremental fit index	0.94		0.97		0.97	
Relative fit index	0.89		0.94		0.94	

frequency, not on the intensity, of the affective states is appropriate because frequency of positive affect produces life satisfaction (Diener, Sandvik, & Pavot, 1991) and flourishing (Fredrickson & Losada, 2005). Cronbach Alpha is 0.82.

3.4. Employees' hope measurement

The study measures hope with the six items of the State Hope Scale (Snyder et al., 1996), after translation, back translation, and adaptation to work contexts by Rego, Machado, Leal, and Cunha (2009). A sample item is: "If I should find myself in a jam at work, I could think of many ways to get out of it." Individuals report the degree to which, over the last three months, the statement applies to them (1: "the statement doesn't apply to me at all"; …; 5: "the statement applies to me completely"). Cronbach alpha is 0.91.

3.5. Employees' creativity measurement

The study measures creativity through five items (Portuguese version; Rego et al., 2007) proposed by Zhou and George (2001), representing new and useful ideas. Sample items are: (1) "This employee comes up with new and practical ideas to improve performance"; (2) "This employee suggests new ways to increase quality." Supervisors report how frequently the employee adopts the five behaviors, over the last three months, on a scale ranging from 1 (never) to 5 (frequently). Cronbach Alpha is 0.94.

3.6. Usefulness analysis

The study conducts a usefulness analysis (Darlington, 1990) for testing if AL may be considered as core construct. A usefulness analysis involves a series of regressions where one variable (e.g., AL as a core construct) compares to other variables (e.g., each one of the four AL dimensions) to see which variable is the most "useful" in predicting criterion variables (e.g., employees' creativity and positive affect). For the present study, each individual AL component enters into a regression to predict employees' creativity and positive affect. Then, the overall AL enters into the regression, and the increase in the R^2 value is computed. The study then compares these results with the reverse situation. The individual AL components do not add any significant variance in predicting both dependent variables, except in two cases, where the variance is 2% (leaders' relational transparency predicting employees' creativity) and 1% (leaders' self-awareness predicting employees' positive affect). In all cases, overall AL increases the R^2 value above and beyond its respective individual components.

3.7. Confirmatory factor analyses for testing discriminant validity and common source effects

The study carries out a series of dimension-level confirmatory factor analyses to examine whether the four variables of the study capture distinct constructs versus common source effects. The four-factor model fits the data reasonably well. In fact, although RMSEA (0.10) is somewhat higher than the cutoff value (0.8), several fit indices are satisfactory (e.g., NNFI: 0.90; CFI: 0.91; IFI: 0.92). The two-

factor model, where employees' positive affect, hope, and creativity merge into a single factor, does not fit the data satisfactorily (e.g., RMSEA: 0.17) and is significantly poorer than the four-factor model ($\Delta\chi^2_{(5)} = 502.78$, $p<0.001$). Another two-factor model, in which AL, employees' positive affect, and hope merge into a single factor, does not fit the data satisfactorily (e.g., RMSEA: 0.18) and is significantly poorer than the four-factor model ($\Delta\chi^2_{(5)} = 681.24$, $p<0.001$); the single-factor model also does not fit the data satisfactorily (e.g., RMSEA: 0.21), and is significantly poorer than the four-factor model ($\Delta\chi^2_{(6)} = 974.16$, $p<0.001$). These findings provide support for the discriminant validity of AL, positive affect, hope, and creativity.

Because data about AL, positive affect, and hope proceeds from the same source, the study compares two models for examining the extent to which the results are due to common method variance (Podsakoff et al., 2003). The first model includes three factors: four indicators loading on the AL factor, and three and six items loading, respectively, on the positive affect and hope factors. The second model is identical to the first except for the addition of a latent method variance factor comprising the 13 items/indicators. The models differ significantly ($\Delta\chi^2_{(16)} = 79.02$, $p<0.001$), and the fit indices of the second model are better than those of the first (e.g., GFI: 0.8793 → 0.92; NNFI: 0.93 → 0.94; CFI and IFI: 0.94 → 0.97). These findings suggest that common source bias may affect the validity of the study and calls for controlling the impact of the common method variance factor (see the "Results" section).

3.8. Testing the non-independence of data at the organizational level

Considering that a single organization accounts for multiple respondents, intraclass correlation (ICC(1)) assesses if aggregating individual scores at the organizational level is statistically justifiable. ICC(1) is a measure of within-group consensus, the median value in organizational research typically being 0.12 (James, 1982). For all the variables, ICC ranges between 0.02 and 0.07, suggesting that aggregating scores is not justified. A hierarchical linear modeling approach is not feasible because most organizations have only a few cases (16 organizations having five cases or fewer, 20 having between six and nine cases, and only one having 12 cases).

4. Results

Table 2 presents means, standard deviations, and correlations. Employees' tenure relates positively with their hope and creativity. Employees' schooling relates negatively with their hope. The length of the supervisor–employee working relationship relates positively with employees' positive affect, hope, and creativity. AL correlates positively with employees' positive affect, hope, and creativity. Employees' positive affect relates positively with their hope and creativity. Employees' hope and creativity are also positively correlated.

The study uses structural equation modeling (using LISREL with the maximum likelihood estimation method) to test the hypothesized model. Considering that employees' tenure and schooling, and the length of the supervisor–employee working relationship correlate significantly with mediating and/or dependent variables, the study includes these variables as control in the structural equation modeling. Fig. 1 shows the findings (for clarity, the paths relative to the control variables are not shown), including standardized path coefficients, explained variances, and fit indices. The path between AL and employees' creativity is significant, H_1 being supported. The path between AL and employees' positive affect is significant, and thus H_2 is supported. The path between employees' positive affect and their creativity is not significant, and thus H_3 is not supported. Considering this finding, H_4 (hypothesizing that employees' positive affect partially mediates the relationship between AL and employees' creativity) is also not supported. The path between AL and employees' hope is significant, supporting H_5. The path between employees' positive affect and their creativity is significant, thus supporting H_6. Taking also into account the significant path between AL and employees' hope, H_7 (hypothesizing that employees' hope partially mediates the relationship between AL and employees' creativity) is also supported. The path between employees' positive affect and their hope is significant, and thus H_8 is supported. Taking into account the significant path between employees' hope and their creativity, H_9 (hypothesizing that employees' hope partially mediates the relationship between their positive affect and creativity) is also supported. In short, all hypotheses receive support with the exceptions of H_3 and H_4.

To assess the potential impact of common method variance, the study includes the latent method variance factor mentioned above as control (Podsakoff et al., 2003). When the study controls for common method variance, most path parameters remain the same, and the overall pattern of relationships between the constructs also remains the same. However, two path parameters (hope → creativity; LA → creativity) increase considerably. Thus, although the findings support all hypotheses except H_3 and H_4, the findings must be seen with caution.

The study also tests four alternative models (Fig. 2). The first does not include the path between positive affect and hope. The second does not include the paths between positive affect and hope, and between AL and creativity. The third considers that AL predicts positive affect, positive affect predicts hope, and hope predicts creativity. The fourth is similar to the third except for the addition of a direct link between AL and creativity. The findings show that the hypothesized

Table 2
Means, standard deviations, and correlations.

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Employees' age	27.0	4.2	–								
2. Employees' tenure	3.6	2.2	0.59***	–							
3. Employees' gender[a]	–	–	0.23***	0.03	–						
4. Employees' schooling years[b]	2.5	0.6	0.48***	0.07	0.29***	–					
5. Length of the supervisor–employee working relationship (years)	3.0	1.9	0.47***	0.71***	−0.07	0.11	–				
6. AL	2.9	0.8	0.00	0.10	−0.04	−0.12	0.08	(0.94)			
7. Employees' positive affect	5.5	0.9	0.08	0.11	−0.01	−0.01	0.19**	0.66***	(0.82)		
8. Employees' hope	3.8	0.7	0.01	0.18**	0.01	−0.15*	0.18**	0.68***	0.75***	(0.91)	
9. Employees' creativity	3.3	1n0	0.02	0.16*	0.01	−0.12	0.17*	0.75***	0.59***	0.76***	(0.94)

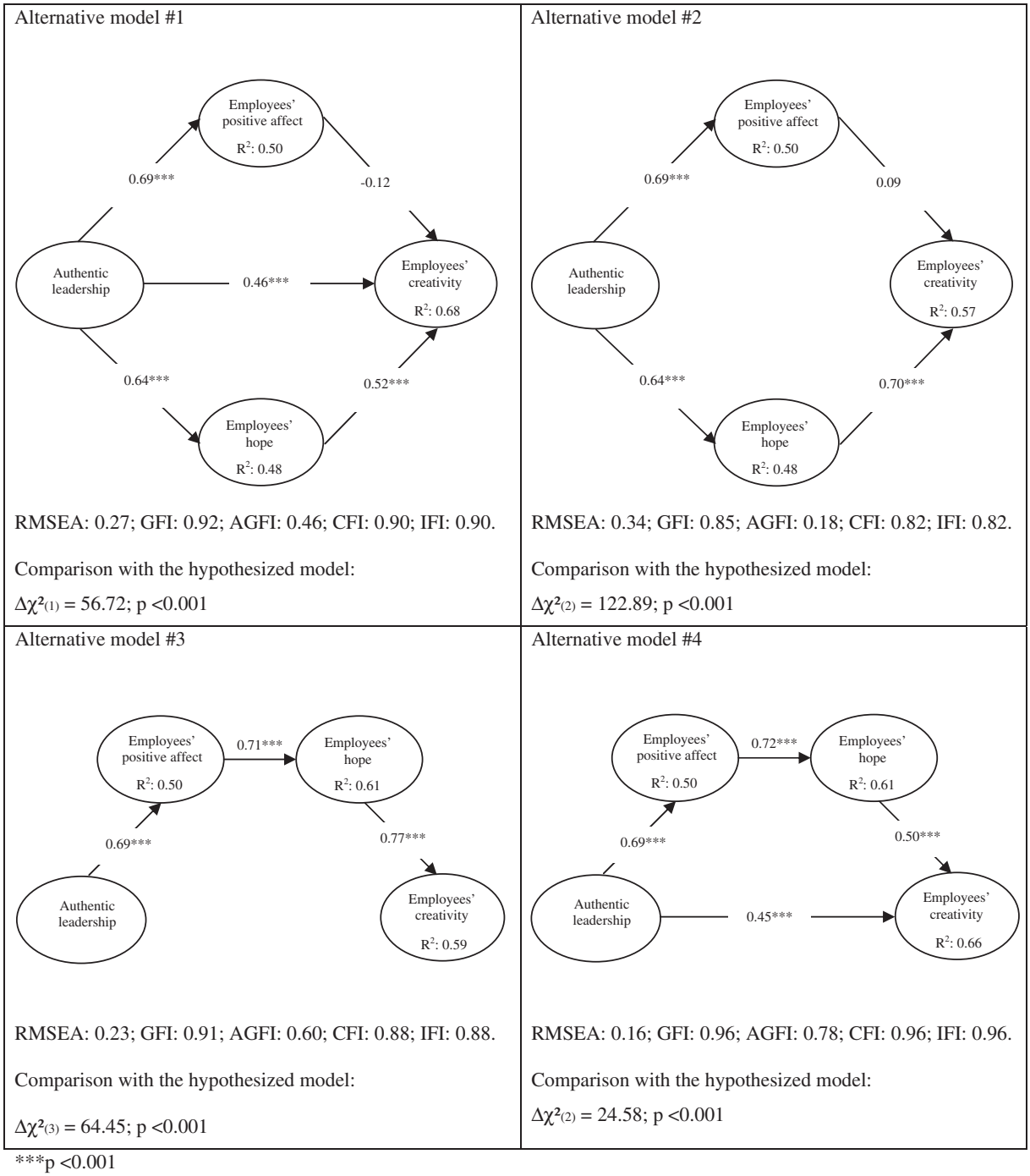
In parentheses: Cronbach Alphas.
[a] 0: female; 1: male.
[b] 1: nine or fewer years of schooling; 2: 10–12 years; 3: at least a bachelor's degree.
* $p<0.05$.
** $p<0.01$.
*** $p<0.001$.

model fits the data better than the four alternative models (considering the change in χ^2 relative to the difference in degrees of freedom).

5. Discussion and conclusions

5.1. Main findings

The path coefficients between the constructs are strong enough to allow the conclusion that *real* relationships exist between them. However, the findings must be seen with caution, considering that common method variance may affect them. Despite that, the findings suggest that AL is an important predictor of employees' creativity (corroborating Rego et al., 2012a), and helps to explain the processes through which such a relationship operates. Authentic leaders promote employees' creativity because employees experience more positive affect and develop greater hope, thus being more creative. Although the study does not show a direct relationship between positive affect and creativity, positive affect relates with creativity



***p <0.001

(a) Standardized path coefficients are shown over the arrows.

(b) Paths referring to the control variables are not shown.

Fig. 2. Testing alternative models through structural equation modeling.

through the mediating role of hope, after controlling for the effects of AL. Positive affect makes individuals potentially more creative because positive affect *builds* their hope (as the broaden-and-build model suggests), and hope leads individuals to challenge the status quo and persevere in the face of challenges inherent to creative work (Shalley & Gilson, 2004).

The findings also indicate direct relationships between AL and employees' creativity, suggesting that mechanisms other than hope and positive affect operate. Future studies may explore such processes (see the next sub-section). AL influences how employees identify problems, search for and encode information, generate alternative solutions, and evaluate ideas (Reiter-Palmon & Illies, 2004). For example, the leaders' balanced processing may make employees feel that leaders are more receptive to different employees' perspectives about the sources of problems and the ways to solve them. The leaders' balanced processing and moral orientation may promote employees' trust and respect, thereby helping them to feel free to propose solutions that differ from those of the leader, and/or other powerful team members. The leaders' relational transparency may encourage employees to express their thoughts, opinions, and feelings, to feel that the leader's proposals and ideas are genuine, and that the environment is safe for dealing with problems and opportunities.

The findings contribute to the enrichment of a field that, despite its "dramatic increase in scholarly interest" in the last decade (Gardner et al., 2011), is mainly conceptual and requires more empirical work, especially in understudied cultural contexts such as ours (see the Gardner et al., 2011 literature review for identifying the authors' country of AL studies). By relating AL with a "soft criterion" of performance (Yammarino et al., 2008) that is almost absent from AL empirical studies (Gardner et al., 2011), and studying two mediating mechanisms (employees' positive affect and hope) through which AL may impact employees' creativity, the study answers to recent calls of (a) Avolio and Mhatre (2012), who recommend the study of a broader range of mediating mechanisms between AL and performance outcomes, and (b) Gardner et al. (2011), who recommend expanding the nomological network for AL.

5.2. Implications for management

For organizations interested in responding to changing and uncertain environments, overcoming innovative competitors, and improving performance, promoting creativity is a need, rather than an option (Egan, 2005; Reiter-Palmon & Illies, 2004). Organizations need to facilitate the creativity of their employees. Despite the above-mentioned limitations, the study may help organizations/managers to identify ways in which these needs can be addressed. First: selecting leaders with authentic features, and implementing training and development actions seeking to increase AL may have a positive impact on employees' positive affective states, hope, and creativity. The creation of positive organizational cultures, rich in transparency and supportiveness (Gardner et al., 2005; Luthans & Avolio, 2003), may promote the leaders' psychological capital (Avolio & Gardner, 2005; Luthans & Avolio, 2003), decrease organizational ambiguity, and facilitate attribution retraining for making leaders more aware of their biases (Harvey, Martinko, & Gardner, 2006). These are possible examples of AL developmental actions.

Second: developing employees' hope through processes other than AL may also pay off in terms of employees' creativity. Literature (Luthans & Youssef, 2004; Luthans et al., 2007) suggests that hope may develop through techniques such as: (a) implementing appropriate goal setting; (b) breaking down complex, difficult, or long-term goals into manageable sub-goals; (c) adopting delegation and empowerment initiatives; (d) showing confidence in employees; (e) preparing employees to deal with contingencies and making them ready for multiple possibilities; and (f) helping employees to re-goal, readjusting goals when blockages are encountered. Hope may also develop through neuroscience (Peterson, Balthazard, Waldman, & Thatcher, 2008). With these hope raising tools, managers and organizations may also stimulate other positive consequences of this psychological strength, including workplace performance, job satisfaction, work happiness, and organizational commitment (Luthans et al., 2007; Peterson & Byron, 2008; Youssef & Luthans, 2007).

Third: organizations and managers may promote employees' hope and, in turn, their creativity by helping them to experience positive affective states. Possible actions in this regard include: (a) promoting opportunities for employees' learning and personal development; (b) creating positive interpersonal relationships among employees and between leaders and followers; (c) improving the employees' justice perceptions; (d) facilitating work-family balance; (e) improving task significance; and (f) promoting organizational virtuousness via organizational environments characterized by trust, optimism, compassion, integrity, and forgiveness (Fisher, 2010; Kets de Vries, 2001; Rego & Cunha, 2008, 2009; Rego, Souto, & Cunha, 2009; Rego et al., 2010). The solution, however, is not to promote only positive affective states and remove all the negative ones. In fact, literature also suggests that negative effect(s) may influence creativity positively, at least under certain conditions (Zhou & George, 2001; Zhou & Ren, 2012). The goal should be to encourage high positivity ratios (Fredrickson, 2008; Rego et al., 2012b).

5.3. Limitations and future studies

The study is not without its limitations, and future studies may provide a clearer view of how the variables included here relate empirically and interact with other variables. First: other causal links and explanations are plausible. For example, employees' positive affect may influence their perceptions of leader authenticity (Brief & Weiss, 2002), rather than the other way around. People experiencing positive affect in recent months in an organization may also reciprocate, attributing authentic actions/intentions to the leaders, regardless of leader behavior.

When employees experience positive affect, they influence the leaders' affect through emotional contagion (Barsade, 2002), thus motivating leaders to behave more authentically toward subordinates (Ilies et al., 2005) or, at least, making the subordinates more inclined to describe leaders positively. Positive affect may also build high quality connections (Stephens et al., 2012) within the teams and with supervisors, thus leading supervisors to adopt more authentic behaviors. Zhou and Ren (2012) point out the dynamic relationship between affect and creativity, considering that positive affect may be both an antecedent and consequence of creativity. Amabile et al. (2005, p. 393) argue that the "creative act can be an emotional experience in and of itself."

A supervisor may report more creativity in his/her subordinates, not because they are necessarily more creative, but because the subordinate's positive affect improves the quality of leader-member exchange, and creates a halo effect that prompts the supervisor to be more benevolent when reporting creativity. Authentic leaders may also experience more positive affect (including those induced by the contagion experienced in contact with employees' positive affect), thus being more benevolent while describing employees' creativity.

Second: the study uses a convenience sample, including only employees working in retail organizations. Future studies may test the hypothesized model with employees from other types of organizations and industries. Third: being carried out at a single moment, the study does not capture the dynamics that occur over the course of time involving changes in emotional states and their effects on hope and creativity. The study also fails to capture the reciprocal relationships and upward and downward spirals (Fredrickson, 2003) that occur over time. Longitudinal designs, research diaries, and/or the experience sample methodology may be particularly appropriate tools for gathering data in future studies (Amabile et al., 2005; Fisher, 2002).

Fourth: only three positive affective states are measured, which restricts the content coverage of the positive affect's construct domain. Future studies may include a wider range of positive affective states. Fifth: considering some overlap between AL and other leadership constructs (e.g., ethical and transformational leadership; Avolio & Gardner, 2005; Walumbwa et al., 2008), the study should include other constructs beyond AL. Although evidence (Walumbwa et al., 2008, 2011) suggests that the construct has incremental validity regarding ethical and transformational leadership, future studies may include these leadership constructs for testing the "added value" of AL. Sixth: future studies may use other mediating variables, such as reciprocation, identification with the supervisor, psychological empowerment, work engagement, trust, feelings of meaningful work, intrinsic motivation, leader-member exchange, and followers' authenticity. For example, do authentic leaders promote employees' creativity because the employees feel empowered, engaged, intrinsically motivated, and develop greater commitment toward their leaders? Avolio et al. (2004, p. 809) suggest that "for authentic leaders to have the greatest impact on followers' hope, such leaders must identify with their followers as followers should with the leader and share their goals with them." Thus, future studies may include followers' identification as mediator between AL and hope (and other dimensions of psychological capital; Luthans et al., 2007).

Seventh: the findings appear to be contaminated by common method bias, the independent and mediating variables proceeding from the same source. Future studies may collect such data at different times. Research diaries, and/or the experience sample methodology may also be appropriate tools to deal with these concerns.

Eighth, and last, although the study collects the dependent variable from a different source, the relationships between predictors and creativity, and the explained variances, are surprisingly high. One possible explanation is that leadership behaviors and employees' positive states are especially predictive of creativity in contexts of sales, where most contacts with customers may recommend behaviors with a creative component (Rego et al., 2012b). An alternative explanation is that a halo effect may influence supervisors, thus describing employees with high positive affect and hope more positively than employees with low positive affect and hope (i.e., rating them with higher creativity scores). Future studies must test if the results of the present study are replicable in the same and other contexts, and/or collect objective measures of creativity.

5.4. Concluding remarks

In spite of these limitations, the study here helps to understand two mechanisms (i.e., employees' hope and positive affect) through which authentic leaders may promote a crucial source of employees' performance and organizational competitiveness: employee creativity. Selecting and developing authentic leaders are a way to foster not only more virtuous organizations but also happier, psychologically stronger, and more creative and productive workers (Avolio et al., 2004; Rego et al., 2012a; Wright & Cropanzano, 2004). Considering that mechanisms other than AL may promote employees' hope (e.g., Luthans & Youssef, 2004) and positive affect (e.g., Fisher, 2010), the study suggests that managers have at their disposal a wide array of tools to encourage employees' creative behavior.

References

Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, *40*(1), 39–58.

Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, *50*, 367–403.

Ashkanasy, N. M., & Tse, B. (2000). Transformational leadership as management of emotions. A conceptual review. In N. Ashkanasy, C. Hartel, & W. Zerbe (Eds.), *Emotions in the workplace: Development in the study of the managed heart* (pp. 221–235). Westport: Quorum.

Atwater, L., & Carmeli, A. (2009). Leader-member exchange, feelings of energy, and involvement in creative work. *The Leadership Quarterly*, *20*(3), 264–275.

Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, *16*, 315–338.

Avolio, B. J., & Mhatre, K. H. (2012). Advances in theory and research on authentic leadership. In K. S. Cameron, & G. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 773–783). Oxford: Oxford University Press.

Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., & May, D. R. (2004). Unlocking the mask: A look at the process by which authentic leaders impact follower attitudes and behaviors. *The Leadership Quarterly*, *15*, 801–823.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, *47*(4), 644–675.

Brief, A. B., & Weiss, H. M. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology*, *53*, 279–307.

Cameron, K., & Winn, B. (2012). Virtuousness in organizations. In K. S. Cameron, & G. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 231–243). Oxford: Oxford University Press.

Cameron, K. S., Bright, D., & Caza, A. (2004). Exploring the relationships between organizational virtuousness and performance. *American Behavioral Scientist*, *47*(6), 1–24.

Darlington, R. B. (1990). *Regression and linear models*. New York: McGraw-Hill.

Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *Subjective well-being* (pp. 119–139). Oxford: Pergamon.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*, 350–383.

Egan, T. M. (2005). Factors influencing individual creativity in the workplace: An examination of quantitative empirical research. *Advances in Developing Human Resources*, *7*(2), 160–181.

Elsbach, K. D., & Hargadon, A. B. (2006). Enhancing creativity through "mindless" work: A framework of workday design. *Organization Science*, *17*(4), 470–483.

Estrada, C. A., Isen, A. M., & Young, M. J. (1994). Positive affect improves creative problem solving and influences reported source of practice satisfaction in physicians. *Motivation and Emotion*, *18*(4), 285–299.

Fisher, C. (2002). Antecedents and consequences of real-time affective reactions at work. *Motivation and Emotion*, *26*, 3–30.

Fisher, C. D. (2010). Happiness at work. *International Journal of Management Reviews*, *12*, 384–412.

Forgas, J. P. (1992). Affect in social judgments and decisions: A multiprocess approach. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 227–276). New York: Academic Press.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218–226.

Fredrickson, B. L. (2003). Positive emotions and upward spirals in organizational settings. In K. Cameron, J. Dutton, & R. Quinn (Eds.), *Positive organizational scholarship* (pp. 163–175). San Francisco: Berrett Koehler.

Fredrickson, B. L. (2008). Promoting positive affect. In M. Eid, & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 449–468). New York: Guilford Press.

Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion*, *19*, 313–332.

Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist*, *60*, 678–686.

Furnham, A., & Nederstrom, M. (2010). Ability, demographic and personality predictors of creativity. *Personality and Individual Differences*, *48*, 957–961.

Gardner, W. L., Avolio, B. J., Luthans, F., May, D. R., & Walumbwa, F. O. (2005). Can you see the real me? A self-based model of authentic leader and follower development. *The Leadership Quarterly*, *16*, 343–372.

Gardner, W. L., Cogliser, C. C., Davis, K. M., & Dickens, M. P. (2011). Authentic leadership: A review of the literature and research agenda. *The Leadership Quarterly*, http://dx.doi.org/10.1016/j.leaqua.2011.09.007.

George, W. (2003). *Authentic leadership: Rediscovering the secrets to creating lasting value*. San Francisco: Jossey-Bass.

George, J. M., & Zhou, J. (2007). Dual tuning in a supportive context: Joint contributions of positive mood, negative mood, and supervisory behaviors to employee creativity. *Academy of Management Journal*, *50*(3), 605–622.

Haller, M., & Hadler, M. (2006). How social relations and structures can produce happiness and unhappiness: An international comparative analysis. *Social Indicators Research*, *75*, 169–216.

Harvey, P., Martinko, M. J., & Gardner, W. L. (2006). Promoting authentic behavior in organizations: An attributional perspective. *Journal of Leadership and Organizational Studies*, *12*(3), 1–11.

Ilies, R., Morgeson, F. P., & Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: Understanding leader-follower outcomes. *The Leadership Quarterly*, *16*, 373–394.

James, L. R. (1982). Aggregation bias in estimates of perceptual measures. *Journal of Applied Psychology*, *67*, 219–229.

Jaussi, K. S., & Dionne, S. D. (2003). Leading for creativity: The role of unconventional leader behaviour. *The Leadership Quarterly*, *14*, 475–498.

Kernis, M. H. (2003). Toward a conceptualization of optimal self-esteem. *Psychological Inquiry*, *14*, 1–26.

Kets de Vries, M. F. R. (2001). Creating authentizotic organizations: Well-functioning individuals in vibrant companies. *Human Relations*, *54*, 101–111.

Klijn, M., & Tomic, W. (2010). A review of creativity within organizations from a psychological perspective. *The Journal of Management Development*, *29*(4), 322–343.

Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management*, *15*, 47–119.
Luthans, F., & Avolio, B. J. (2003). Authentic leadership: A positive developmental approach. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 241–261). San Francisco, CA: Barrett-Koehler.
Luthans, F., & Youssef, C. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*, *33*(2), 143–160.
Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital.* Oxford: Oxford University Press.
Merlo, O., Bell, S. J., Mengüç, B., & Whitwell, G. J. (2006). Social capital, customer service orientation and creativity in retail stores. *Journal of Business Research*, *59*(12), 1214–1221.
Michie, S., & Gooty, J. (2005). Values, emotions, and authenticity: Will the real leader please stand up? *The Leadership Quarterly*, *16*, 441–457.
Miller, J. (1997). All work and no play may be harming your business. *Management Development Review*, *10*(6/7), 254–255.
Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, *39*, 607–634.
Peterson, S. J., & Byron, K. (2008). Exploring the role of hope in job performance: Results from four studies. *Journal of Organizational Behavior*, *29*, 785–803.
Peterson, S. J., Balthazard, P. A., Waldman, D. A., & Thatcher, R. W. (2008). Neuroscientific implications of psychological capital: Are the brains of optimistic, hopeful, confident, and resilient leaders different? *Organizational Dynamics*, *37*(4), 342–353.
Podsakoff, P. M., MacKenzie, S. B., Lee, J., & 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.
Rego, A., & Cunha, M. P. (2008). Perceptions of authentizotic climates and employee happiness: pathways to individual performance? *Journal of Business Research*, *61*(7), 739–752.
Rego, A., & Cunha, M. P. (2009). Do the opportunities for learning and personal development lead to happiness? It depends on work-family conciliation. *Journal of Occupational Health Psychology*, *14*(3), 334–348.
Rego, A., Sousa, F., Cunha, M. P., Correia, A., & Saur, I. (2007). Leader self-reported emotional intelligence and perceived employee creativity: An exploratory study. *Creativity and Innovation Management*, *16*(3), 250–264.
Rego, A., Machado, F., Leal, S., & Cunha, M. P. (2009). Are hopeful employees more creative? An empirical study. *Creativity Research Journal*, *21*(2/3), 223–231.
Rego, A., Souto, S., & Cunha, M. P. (2009). Does the need to belong moderate the relationship between perceptions of spirit of camaraderie and employees' happiness? *Journal of Occupational Health Psychology*, *14*(2), 148–164.
Rego, A., Ribeiro, N., & Cunha, M. P. (2010). Perceptions of organizational virtuousness and happiness as predictors of organizational citizenship behaviors. *Journal of Business Ethics*, *93*(2), 215–225.
Rego, A., Sousa, F., Marques, S., & Cunha, M. P. C. (2012a). Authentic leadership promoting employees' psychological capital and creativity. *Journal of Business Research*, *65*, 429–437.
Rego, A., Sousa, F., Marques, S., & Cunha, M. P. C. (2012b). Optimism predicting employees' creativity: The mediating role of positive affect and the positivity ratio. *European Journal of Work and Organizational Psychology*, *21*(2), 244–270.
Reiter-Palmon, R., & Illies, J. J. (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *The Leadership Quarterly*, *15*, 55–77.
Ryan, R. L., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78.
Schoenewolf, G. (1990). Emotional contagion: Behavioral induction in individuals and groups. *Modern Psychoanalysis*, *15*, 49–61.
Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, *15*, 33–53.
Shin, S. J., & Zhou, J. (2003). Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal*, *46*(6), 703–714.
Snyder, C. R. (1994). *The psychology of hope: You can get there from here.* New York: Free Press.
Snyder, C. R. (2000). *Handbook of hope: Theory, measures, and applications.* San Diego: Academic Press.
Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychologial Inquiry*, *13*, 249–275.
Snyder, C. R., Irving, L., & Anderson, J. (1991). Hope and health. In C. R. Snyder, & D. R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 285–305). Elmsford, NY: Pergamon.
Snyder, C. R., Sympson, S. C., Ybasco, F. C., Border, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, *70*, 321–335.
Snyder, C. R., Lapointe, A. B., Crowson, J. J., Jr., & Early, S. (1998). Preferences of high- and low-hope people for self-referential input. *Cognition and Emotion*, *12*, 807–823.
Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, *16*(5), 537–549.
Stanton, J. M., Sinar, E. F., Balzer, W. K., & Smith, P. C. (2002). Issues and strategies for reducing the length of self-report scales. *Personnel Psychology*, *55*(1), 167–194.
Staw, B. M. (1995). Why no one really wants creativity. In C. M. Ford, & D. A. Gioia (Eds.), *Creative action in organizations* (pp. 161–166). Thousand Oaks, CA: Sage.
Stephens, J. P., Heaphy, E., & Dutton, J. E. (2012). High quality connections. In K. S. Cameron, & G. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 385–399). Oxford: Oxford University Press.
Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, *52*, 591–620.
Turban, D., Stevens, C., & Lee, F. (2009). Effects of conscientiousness and extraversion on new labor market entrants' job search: The mediating role of metacognitive activities and positive emotions. *Personnel Psychology*, *62*(3), 553–573.
Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *Journal of Management*, *34*(1), 89–126.
Walumbwa, F. O., Wang, P., Wang, H., Schaubroeck, J., & Avolio, B. J. (2010). Psychological processes linking authentic leadership to follower behaviors. *The Leadership Quarterly*, *21*(5), 901–914.
Walumbwa, F. O., Luthans, F., Avey, J. B., & Oke, A. (2011). Authentically leading groups: The mediating role of collective psychological capital and trust. *Journal of Organizational Behavior*, *32*, 4–24.
Wang, A., & Cheng, B. (2010). When does benevolent leadership lead to creativity? The moderating role of creative role identity and job autonomy. *Journal of Organizational Behavior*, *31*(1), 106–121.
Wright, T. A., & Cropanzano, R. (2004). The role of psychological well-being in job performance: A fresh look at an age-old quest. *Organizational Dynamics*, *33*(4), 338–351.
Wright, T. A., & Walton, A. P. (2003). Affect, psychological well-being and creativity: Results of a field study. *Journal of Business and Management*, *9*(1), 21–32.
Yammarino, F. J., Dionne, S. D., Schriesheim, C. A., & Dansereau, F. (2008). Authentic leadership and positive organizational behavior: A meso, multi-level perspective. *The Leadership Quarterly*, *19*(6), 693–707.
Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The impact of hope, optimism, and resilience. *Journal of Management*, *33*(5), 774–800.
Zhang, X., & Bartol, K. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of Management Journal*, *53*(1), 107–128.
Zhou, J. (2003). When the presence of creative coworkers is related to creativity: Role of supervisor close monitoring, developmental feedback, and creative personality. *Journal of Applied Psychology*, *88*(3), 413–422.
Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, *44*(4), 682–696.
Zhou, J., & George, J. M. (2003). Awakening employee creativity: The role of leader emotional intelligence. *The Leadership Quarterly*, *14*, 545–568.
Zhou, J., & Ren, R. (2012). Striving for creativity: Building positive contexts in the workplace. In K. S. Cameron, & G. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 97–109). Oxford: Oxford University Press.