



Relationship between Dispositional Positive Emotions and Creativity: Synergistic Role of Trait Positive Affect

Golparvar Mohsen, Rajezi Esfahani Rasoul and Mehdad Ali

Department of Industrial and Organizational Psychology, Esfahan (Khorasgan) Branch, Islamic Azad University, Esfahan, IRAN

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Abstract

Creativity is one of the very effective variables on organizational effectiveness. According to the moderating role of positive affect, the main purpose of this research was to study the role of dispositional positive emotions on creativity. The research method was correlational and the sample group consisted of two hundred seventy staff of regional's training and teaching administrations, in Esfahan, Iran. The research instruments included dispositional positive emotions, creativity, and positive affect questionnaires. Data were analyzed by moment product correlation coefficient and moderated hierarchical regression analysis. The results indicated that there is a significant and positive association between dispositional positive emotions dimensions with positive affect and creativity. The results of hierarchical regression analysis also indicated that positive affect moderate the association between contentment, pride and love and creativity. Posterior regression analysis revealed that in high positive affect group, rather than in low positive affect group, there is a stronger relationship between contentment and love with creativity. Also posterior regression analysis revealed that in low positive affect group, rather than in high positive affect group, there is a stronger significant relationship between pride and creativity. The results of the current research showed that positive affect could have discriminate effects on the relationship between some aspects of dispositional positive emotions and creativity.

Keywords: Dispositional positive emotions, positive effect, creativity, Iran.

Introduction

Different organizations such as service, commercial, and industrial organizations of the world today face conditions in which it is necessary to seek ways to maintain and promote their survival in interacting other competing organizations for dealing with them effectively and constructively¹. Certainly, any organization for achieving this purpose needs efficient and capable employees with high compatibility of facing new and modern conditions^{2,3}. Talented and capable employees can help organizations both in being more effective and better performed and also creating better future and perspective for their own organizations^{4,5}. Among different abilities, creativity is such an ability which can play a constructive and critical role for the above mentioned purposes^{6,7}. Until now, various definitions have been provided about creativity.

Based on one of accepted definitions, creativity consists of producing and expanding ideas, products, and useful and innovative solutions for problems⁸. According to this definition and in terms of operational indicators, creativity includes various forms of useful and valuable ideas, products, and innovative solutions for tasks ahead⁹. Beyond a definition of creativity, there was a question which like many other areas has always attracted scholars' mind: How we can reinforce the desire of individuals to creatively solve problems?

The response of existing human knowledge to this question is providing diverse micro and macro variables which are impossible to talk about them in this research. In a short overview about effective factors on creativity, it can be said that a various range of psychological, social, and cultural factors can play a role in creating and promoting required basic abilities for creativity^{8,9}. Among different psychological factors, emotions and affects have been long ago considered as effective factors in decision-making and different human behaviors. According to many experts and scholars in psychology, humans are naturally emotional creatures¹⁰. It means that we can see the trace of emotions and affects in their behavior even in the most logical decisions and conditions. Among emotional loading constructs, dispositional positive emotions and positive affect have considerable theoretical and research basics in relation to creativity.

Literature Review: Dispositional Positive Emotions and Creativity: In an overview of the existing scientific and research texts, a remarkable combination could be seen in the use of emotion and affect¹⁰. In a more precise meaning, in many scientific works, these two words have been used in a replaceable form beside or instead of each other¹¹. Regardless of similarities and differences discussed between emotion and affect, what is largely accepted is that some theorists by looking at roles and effects of emotions and affects on human's behaviors have followed one of two holistic approach or minor components viewpoint^{12,13}. According to this issue

and what is discussed by Shiota et al¹², dispositional positive emotions consist of seven components (joy, contentment, pride, love, compassion, sense of humor, and awe).

Theoretically, each of seven above mentioned positive emotions is different from others¹². Also, in previous researches, each of these seven positive emotions has been examined beside others or alone^{14,15}. It can be defined that joy is a high level of emotional arousal which happens in facing conditions in which survival resources improvement in the environment are felt¹². Contentment will be experienced as a second positive emotion when an individual feels that his/her available resources fit his/her needs or are beyond them¹². Pride is an emotion that happens when an individual achieves a success in valuable social affairs and through that it is possible for him to obtain a more appropriate group or social status¹⁵⁻¹⁷. Love, based on attachment theory, will be experienced when an individual feels that other's action is reliable and for this reason he/she can trust and rely on him/her¹². Compassion is an emotion derived from attending other's well-being and happens due to observing his/her helplessness, worry, and distress¹⁸.

Amusement or sense of humor which is often associated with telling jokes is experiencing an emotion that happens in a cognitive level due to changing viewpoint rather than various phenomena¹². Finally, the last positive emotion, awe, which like amusement has an epistemological nature, happens when an individual in accommodation of experiences and phenomena encounters new and complex problems and ones incongruent with his/her previous knowledge and experiences¹⁹. Some research evidences show that each of these positive emotions can have different functions rather than others²⁰. However, what is considered in the present study is the role of positive emotions in creativity. Although no research has been available in which the relationship between every single positive emotion and creativity had been reported, many researchers have generally indicated that there is a positive significant association between creativity and positive emotions^{6,7,8,21,22}.

Positive Affect and Creativity: Historically and based on the existing theoretical background, affects are discussed in two forms of positive and negative and also trait and state affects¹¹. State affects are affections which occur under different conditions and situations and by passing those situations they will generally be disappeared^{23,24}. That is why it is said that state affect depends on a situation. In the contrast, trait affects are considered as stable personal features that regardless of the conditions and situations they are with individuals in different times and places¹⁹. Based on this, trait affects unlike state affects are considered as a situation free²⁵. In measuring trait and state affect, it is focused on the amount of relative stability of affects through which trait affects could be distinguished from state ones²⁵. In this research, it is focused on positive trait affect as a synergistic variable in the association between

dispositional positive emotions and creativity. Generally, the trait positive affect reflects the amount of being enthusiastic, active, and alert²⁶.

In this regard, high positive affect causes a sense of energy, focusing completely, and delightfully engaging with affairs and activities. In the contrast, low positive affect causes a sense of grief, helplessness, and the lack of energy²⁵. In theoretical configuration provided by Tellegen²⁵ positive trait affect beside negative one is introduced as the main types of emotionality. In this approach, emotionality refers to the relatively stable readiness of emotional reaction to the conditions and situations which individuals encounter. Available evidences show that positive affect is associated with a various outcomes such as cognitive flexibility, higher reliability and efficiency, generating new ideas, using appropriate decision-making strategies, and increasing the power of coping with problems and stress²⁶.

In the newest configurations by Golparvar and Abedini²⁷, positive affect along with the feeling of energy and happiness are introduced as the components of the human affective capital. In terms of affective capital approach, positive affect has a function of promoting psychological well-being which also consists of a more general sense of self and life satisfaction²⁷. Because of that, when an individual has a high positive affect, he/she feels in himself/herself a necessary emotional and psychological power and capital for having a comprehensive and flexible look around the world and issues he/she is encountering²⁷. Such a feeling can be one of the important foundations of creative behaviors and ideas^{28,29}.

Synergistic effect of Positive Affect in the association between Dispositional Positive Emotions and Creativity: It should be also emphasized that positive trait affect has overlaps with components of dispositional positive emotions. However, a closer look at what is considered in measuring positive affect (being inspired, alert, active, strong, proud, attentive, enthusiastic, interested, determined, and excited) shows that positive affect is an overall form of high sense of energy and has more general in nature compared with components of dispositional positive emotions (such as joy, contentment, pride, love, and so on)^{10,20}. Furthermore, some considered items about positive affect (such as being determined and alert) have not been accepted by theorists as emotions¹². According to what has been mentioned in this research, positive affect is considered as a more general construct rather than components of dispositional positive emotions.

Considering what has been mentioned above, almost in the last few decades it is repeatedly showed that emotions and affects can play an important role in developing and expanding creative behaviors and ideas in the workplaces^{4,10}. In a precise meaning, there are growing evidences available which represent that there is a relationship between positive emotions

and affects and creativity^{28,29}. This relationship has been so far explained by several approaches and theories. In a short overview on these approaches and theories, it can be said that in the most suggested explanations about how positive emotions and affect play a role in creativity, it is focused on their role in expanding individuals' cognitive and perceptual capacities⁴.

For instance, in Fredrickson's broaden-and-build theory³⁰, positive affects are introduced as factors which cause the increase and expansion in attending, concentrating, and expanding cognitive processing capacities²⁸. Relatively rich evidences which are available now suggest that the increase and expansion in attending, concentrating, and expanding cognitive processing capacities are critical and necessary to find diverse solutions for problems in different conditions and situations³⁰. For example, Cavanaugh²⁰, Shiota et al¹², and Baron et al²⁶ have mentioned studies in their researches in which a significant association between creativity and positive emotions and affects has been reported. Beyond simple association between positive emotions and creativity, a synergistic role of positive trait affect in the association between dispositional positive emotions and creativity has been focused in this research.

Theoretical Framework of Research: Offering the idea of synergistic role of trait positive affect in the relationship between dispositional positive emotions and creativity has been emerged from distinctions between the amount of stability and totality of trait positive affect compared with dispositional positive emotions. As it mentioned before, trait positive affect is a stable characteristic which in different conditions and situations is more or less associated with humans of these features. Therefore, even when an individual has a powerful positive effect, he/she will experience other minor positive emotions such as love, compassion, and contentment easier and clearer. So, positive affect as a general affectionate characteristic provides a stable effective context of minor positive emotions on individual's behaviors and ideas. In another word, it seems that dispositional positive emotions and affects, through synergistic effect, can affect phenomena such as creativity. In a more precise meaning, according to the approach of synergistic effects, it is expected that if positive affect is high, the association between dispositional positive emotions dimensions and creativity will be improved and more powerful. In contrast, if positive affect is low, because an individual doesn't feel required affective capital, the association between dispositional positive emotions and creativity will be weakened. These expectations in this research have been examined through studying a moderating role of positive affect in the relationship between dispositional positive emotions and creativity. The research theoretical framework has been provided in figure-1.

Research Hypotheses: H1. There is a positive significant relationship between dispositional positive emotions and

positive affect. H2. There is a positive significant relationship between dispositional positive emotions and creativity. H3. Trait positive affect moderate the relationship between dispositional positive emotions and creativity. That is, in positive affect levels, there is a different relationship between dispositional positive emotions and creativity.

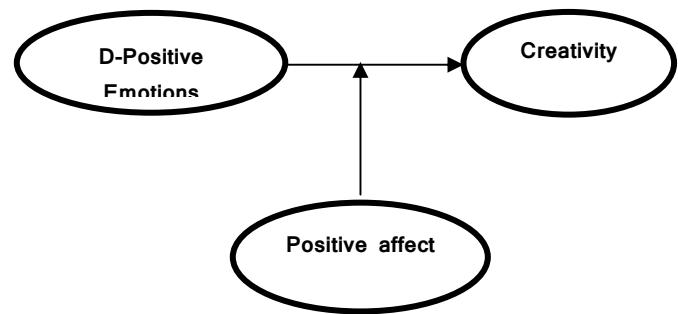


Figure-1
Theoretical Framework of Research

Research Methodology

The method of present inquiry was correlation (descriptive) and its statistical population was included all of the regional training and teaching administrations staff in Esfahan, Iran (spring, 2013). From this statistical population and based on Krejcie and Morgan's sample size table³¹, two hundred eighty employees were selected as a sample to participate in this research. They were selected by convenience sampling method. After collecting questionnaires, ten questionnaires (about %3.6) were excluded due to failure to respond. Therefore, the sample group reduced to two hundred seventy people. From two hundred fifty five employees who declared their education, %9 had associate degree and higher diploma, and %90 had university study. % 90 were 31 years old and above, and %69.2 had 10 years work experience and above.

Measures: Dispositional Positive Emotions Scale (DPES): Dispositional positive emotions were assessed by thirty eight item scale adapted from Shiota et al¹². The scale measures seven dispositional positive emotions dimensions; joy (six items: I am an intensely cheerful person), contentment (five items: I am at peace with my life), pride (five items: I am proud of myself and my accomplishments), love (six items: I develop strong feelings of closeness to people easily), compassion (five items: I often notice people who need help), amusement (five items: I am very easily amused), and awe (six items: I see beauty all around me). In this scale, responses are given along a 7-point scale from 1= strongly disagree to 7= strongly agree. Shiota et al¹² revealed that, there are significant relationship between some of dispositional positive emotions dimensions with big five personality traits and attachment styles. Shiota et al¹² reported Cronbach's alpha of the seven subscales of this scale; joy = .82; contentment= .92; pride =.80; love =.80; compassion =.80; amusement =.75; awe =.78. In current research, Cronbach's alpha for the joy, contentment, pride, love, compassion,

amusement and awe subscales were .87, .84, .82, .83, .86, .84, and .74 respectively.

Trait Positive Affect: Trait positive affect were measured with the Watson, Clark and Tellegen scale³². The scale measures ten indicators of positive affect (interested, alert, inspired, active, proud, enthusiastic, strong, excited, determined, and attentive) for moment, today, past few days, during the past week, past few weeks, during the past year and in general. In this research respondents were asked to rate the extent to which they have experienced each particular positive affects in general. In this scale, responses are given along a 5-point scale from 1= very slightly or not at all to 5= extremely. The higher score indicates severer positive affect. Construct validity of the scale has been verified accurately in previous studies^{32,33}. The alpha reliabilities were all acceptably high, ranging from .86 to .90. This scale has been used in many previous researches in Iran²⁷. In current research Cronbach's alpha was .76.

Creativity: Creativity was measured using four items adapted from Charbonnier-Voirin and Roussel³⁴. Total score on this scale is considered for the assessment of creativity and more the score indicates more creativity. A sample item of this scale is: I am able to make most people feel comfortable and at ease around me. In this scale, responses are given along a 7-point scale from 1= strongly disagree to 7= strongly agree. The reliability and validity of the scale have been demonstrated in previous study³⁴. Charbonnier-Voirin and Roussel³⁴ reported Cronbach's alpha of the scale higher than .8. In this study Cronbach's alpha was .83.

Results and Discussion

As suggested in the statistical texts³⁵, moderated hierarchical regression analysis (in three-stages) was used to examine the third present research hypothesis (H3, about the moderating role of positive affect in the relationship between dispositional positive emotions and creativity). Descriptive statistics (means

and standard deviations) along with correlation matrix among variables are shown in table-1.

As shown in table 1, joy ($r = .35, r = .45, p < .01$ respectively), contentment ($r = .27, r = .42, p < .01$ respectively), pride ($r = .46, r = .58, p < .01$ respectively), love ($r = .33, r = .39, p < .01$ respectively), compassion ($r = .38, r = .35, p < .01$ respectively), amusement ($r = .26, r = .41, p < .01$ respectively), and awe ($r = .45, r = .46, p < .01$ respectively) related positively to creativity and positive affect. Therefore H1 and H2 (There is a positive significant association between dispositional positive emotions with positive affect and creativity) has been supported completely. For conducting moderated hierarchical regression analysis with interaction terms, all the variables centralized and then entered in the regression equation³⁵. The results of moderated hierarchical regression analysis are shown in table-2.

As could be seen in table-2, in model-1, dispositional positive emotions dimensions were entered as predictors of creativity. In model 2, the positive affect entered as predictor of creativity. In model 3, interactions of dispositional positive emotions dimensions and positive affect were entered. As shown in table-2, contentment ($\beta = -.21, -.2$ and $-.16$ for stage one to three ($p < 0.01$ to three ($p < 0.05$)), pride ($\beta = .33, .25$ and $.25$ for stage one to three ($p < 0.01$)), compassion ($\beta = .2, .18$ and $.2$ for stage one to three ($p < 0.01$)), and awe ($\beta = .31, .27$ and $.23$ for stage one to three ($p < 0.01$)) related significantly to creativity. In model 2 (Table 2), positive affect ($\beta = .21, .22$ for stage two and three ($p < 0.01$)) related significantly to creativity. In model 3, our results (table-2) revealed that positive affect has been moderates the relationship between contentment ($\beta = .18, p < .05$), pride ($\beta = -.29, p < .01$), and love ($\beta = .22, p < .01$) and creativity ($\Delta R^2 = 0.056, \Delta F = 3.36, \text{ and } p < .01$). To clarifying the form of the interactions, the equation at the high and low level of positive affect (+ 1SD, and - 1SD) was computed. Table 3, and figures-2, 3 and 4 present the results of posterior simple regression analysis.

Table-1
 Means, standard deviation and inter-correlations between research variables

Variables	M	SD	1	2	3	4	5	6	7	8	9
Joy	4.7	1.17	(.87)								
Contentment	4.98	1.14	.61**	(.84)							
Pride	5.05	1.01	.52**	.65**	(.82)						
Love	4.54	1.1	.52**	.54**	.51**	(.83)					
Compassion	5.64	.99	.35**	.39**	.46**	.47**	(.86)				
Amusement	4.36	1.22	.46**	.3**	.34**	.34**	.2**	(.84)			
Awe	4.39	.99	.47**	.44**	.43**	.48**	.3**	.48**	(.74)		
Creativity	5.13	1.06	.35**	.27**	.46**	.33**	.38**	.26**	.45**	(.83)	
Positive affect	3.51	.51	.45**	.42**	.58**	.39**	.35**	.41**	.46**	.47**	(.76)

Note: * $p < 0.05$, ** $p < 0.01$, Alpha coefficients presented on diagonal

Table-2
Results of moderated hierarchical regression analysis

Predictors	Dependent: Creativity		
	Stage1	Stage2	Stage3
	β	β	β
Joy	.12	.1	.07
Contentment	-.21**	-.2**	-.16*
Pride	.33**	.25**	.25**
Love	-.03	-.02	-.07
Compassion	.2**	.18**	.2**
Amusement	-.02	-.05	-.05
Awe	.31**	.27**	.23**
Positive affect	-	.21**	.22**
Joy \times Positive affect	-	-	-.13
Contentment \times Positive affect	-	-	.18*
Pride \times Positive affect	-	-	-.29**
Love \times Positive affect	-	-	.22**
Compassion \times Positive affect	-	-	.06
Amusement \times Positive affect	-	-	-.03
Awe \times Positive affect	-	-	.04
R^2 or ΔR^2	.338**	.025**	.056**
F or ΔF	18.38**	10.05**	3.36**

Note: * $p < .05$; ** $p < .01$. In stage1, dimensions of dispositional positive emotions were placed in predicting equation, in stage-2, positive affect was placed in predicting equation, and in stage3, interaction of dispositional positive emotions (dimensions) and positive affect were placed in predicting equation.

Table-3
Relationship between contentment, pride and love with creativity in positive affect levels

Relationship	Low positive affect			High positive affect		
	b	β	R^2	b	β	R^2
The relationship between contentment and creativity	.02	.02	.014	.11	.1	.012
The relationship between pride and creativity	.6**	.48**	.231**	.17	.14	.019
The relationship between love and creativity	-.06	-.04	.002	.32*	.38*	.145*

Note: * $p < 0.05$, ** $p < 0.01$

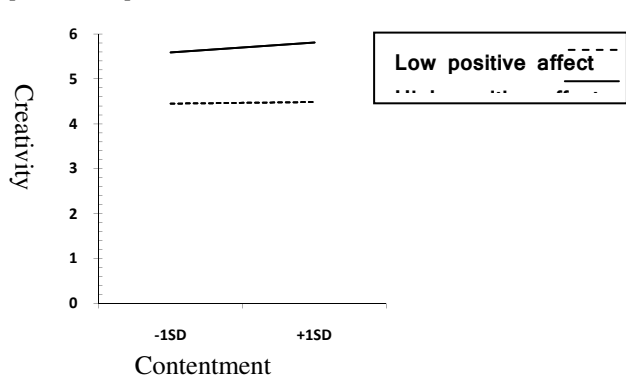


Figure-2

Simple slopes of contentment on creativity for low and high positive affect

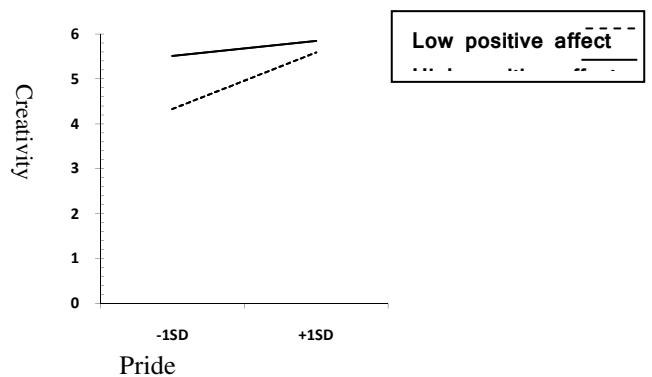


Figure-3

Simple slopes of pride on creativity for low and high positive affect

As it can be seen in figure 2, in low positive affect group ($\beta = .02$, $R^2 = .014$, *n.s.*), rather than in high positive affect group ($\beta = .1$, $R^2 = .012$, *n.s.*), there is a weak relationship between contentment and creativity.

As it can be seen in figure 3, in low positive affect group ($\beta = .6$, $R^2 = .231$, $p < .01$) rather than in high positive affect group ($\beta = .14$, $R^2 = .019$, *n.s.*), there is a stronger relationship between pride and creativity.

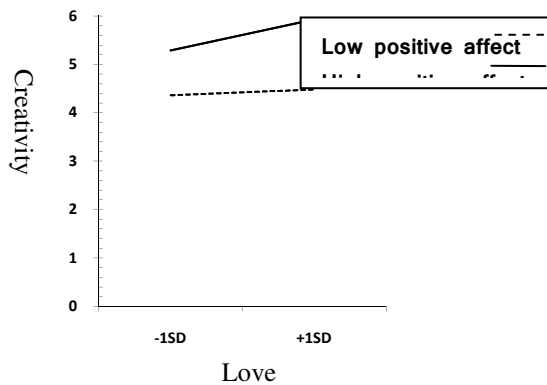


Figure-4
Simple slopes of love on creativity for low and high positive affect

As it can be seen in figure 4, in high positive affect group ($\beta=.38$, $R^2=.145$, $p<.05$), rather than in low positive affect group ($\beta= -.04$, $R^2=.002$, $n.s$), there is a stronger relationship between love and creativity.

This inquiry with a purpose of studying a moderating effect of positive affect in the association between dispositional positive emotions and creativity provided two supportive results from the interactive effect of dispositional positive emotions and positive affect in creativity. In simple correlations' level, this research indicated that there is a significant positive association between seven components of dispositional positive emotions and positive affect with creativity. This result obviously is aligned with other researchers' reported findings^{28,29}. Several theories and approaches have tried to explain the relationship between positive emotions and affects with innovation and creativity. Through these approaches, broaden-and-build theory, by focusing on the role of positive emotions and affects on processes and human's cognitive capacities, has introduced an interaction-oriented viewpoint on cognition and emotion in human^{28,30}.

According to the emphasized assumptions of this theory, the most important functions of positive emotions and affects in cognitive level are increasing and expanding the concentration, accuracy, speed, and development of the perspective. This development and expansion in cognitive capacities can create the ability of having different look on problems, more accurate and faster decisions, and flexibility in countering problems^{28,30} which are essential elements for creatively solving problems^{4,10}. In another word, positive affect as one of the components of affective capital has an emotional and affectionate power to create a sense of having positive power and energy and to make individuals more energetic and motivated in facing their world around them. Indeed, in the approach of positive affect as a form of affective capital, being optimistic toward solving problems and also having a sense of individual empowerment²⁷, in addition to the cognitive and processing capacities which

arise from positive affect³⁰, can increase the ability of solving problems creatively.

The second role in this research which has been supported about emotions and affects has an associated with a moderating role of positive affect between contentment, pride, and love and creativity. In two cases, when positive affect was high, there was a significant association between contentment and love with creativity. But about the pride, when positive affect was low, there was a significant positive association between pride and creativity. This finding shows that high positive affect primarily not plays a reinforcing role for all positive emotions. About contentment and love, positive affect with these two positive emotions creates a synergetic effect. It means that if positive affect is high, contentment and love will create a more facilitative relationship with creativity. The occurrence mechanism of such an effect is simply that in high positive affect, individual's cognitive-emotional space has more preparation to lead the power of positive emotions such as contentment and love toward creative solutions. But about the pride, the synergetic effect of positive affect didn't happen with this positive emotion. It means that pride is a kind of positive emotions which in high positive affect loses its power to increase the creativity. Real reasons of this issue are necessary to be examined in future researches by doing more studies. However, a possible reason rather than others is more important in this case.

The main possibility is that in high positive affect, if the pride is increased, an individual's emotional and affectionate state will not be as one that he/she could focus on creative solutions by required cognitive concentration, accuracy, and expansion. This issue is related to the nature of pride. Pride is a kind of positive emotions that happens when an individual achieves a valuable success¹². When he/she experience pride, the amount of his/her concentrating on him/her features and abilities will be increased¹⁵⁻¹⁷. Such a concentration prevents an individual more likely to look problems through different views and perspectives and to provide creative solutions if he/she has a high positive affect. Therefore, it is more likely that concentrating on ourselves, in high positive effect, will be a deterrent factor in the association between pride and creativity. In the absence of moderating role of positive effect on the association between other four positive emotions (joy, compassion, amusement, and awe) and creativity, several possibilities have been proposed.

The first possibility is that joy, compassion, amusement, and awe may be kinds of emotions which doesn't need to positive affect for having an association with creativity. The second one is that, about a moderating effect of positive affect in the association between dispositional positive emotions and creativity, the basic level of positive emotions is necessary to be high. This possibility arises because, except the love emotion which have lower mean than contentment and pride, two recent emotions (contentment and pride), along with compassion, had the highest mean in this research. Another possibility is that

positive affect may in administrative-service jobs which this research sample has been chosen among them, has a moderating role just for contentment, pride, and love. In such a case, the role of positive affect in the association between dispositional positive emotions and creativity will be depended on the kind of different individual's job. However, determining the actual cause of the absence of moderating role of positive affect in the association between some positive emotions and creativity needs more studies in the future.

Conclusion

This research has several theoretical implications for expanding the current human knowledge. The first implication is that positive affect due to its general nature can be a synergistic potential variable in the association between dispositional positive emotions and creativity. In a more precise meaning, high positive affect can cause a synergistic effect with positive emotions for creativity through creating appropriate emotional and psychological conditions. The second implication which is related to the first one is that a moderating effect of positive affect in the association between some components of dispositional positive emotions and creativity is more likely a conditional role. It means that in all situations, high positive affect may not be a factor for reinforcing the relationship between all components of dispositional positive emotions and creativity.

In another word, for some components of dispositional positive emotions such as pride, low positive affect may be a reinforcing factor in relation to creativity instead of high positive affect. In sum, the results of this research show that for reinforcing employee's creativity in the workplaces, we can use the power of positive emotions and affects such as contentment, love, and pride. In this regard, in the future researches it is necessary to examine the interactive roles of dispositional positive emotions and positive affect for employee's innovative behaviors and their other behaviors in the workplaces. It is also necessary to examine these mentioned interactive roles in a form of experimental design in order to clear more the current human knowledge in this field.

There were some limitations in this research which should be considered. First, the results of this research have been based on measuring the relationship between variables. Despite these kinds of studies can have an important and serious role in our understanding of the various phenomena, we shouldn't forget the fact that interpreting results is not possible (through the results of correlational researches) like experimental and longitudinal studies. The second limitation is that as social and cultural factors can affect the results of the humanities and social sciences, it should be noted that this research was conducted in a service organization in Iran. Therefore, caution is required in generalizing these results to other countries. Creativity in previous researches has been measured and studied in forms of self-report, supervisor-report, and archival data.

Some evidences suggest that individuals may fail unintentionally in self-reporting of creativity and other behaviors. Accordingly, it should be noted that, in this research, creativity and even dispositional positive emotions and positive affect has been measured in a self-reporting form.

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