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AGE AND CREATIVITY: EFFECT OF CHRONOLOGICAL AGE ON MANAGER'S CREATIVITY

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ABSTRACT

Aim of the present investigation is to find out the relationship between managerial personnel's chronological age on creativity in organizations. To find out this relationship, present study was conducted on 206 managers working in different private sector organizations in India. Creativity was assessed by the help of Creative Behaviour Questionnaire. Obtained data were analysed in the term of correlation analysis and hierarchical regression analysis. Results show that age has an inverse relationship with creativity.

INTRODUCTION

Researches on creativity in organizational work setting has been increasing promptly because of it is not only an interest of scientific research but also have an important implications in developing new ideas, services, or product in the organizations in response of increasing battle of company survival. In other words, it is the raw material for innovation in organizations. Major research works in this field were started from last three decades.

Creativity research has a long history in psychology, which followed its traditional approach focusing on individual differences in personality, cognitive abilities, and problem-solving styles. These researches seemed creativity as something produced only by some 'special creative people'. However, researches in organizational creativity

follow contemporary approach. This approach assumes that all humans with normal capacities are able to produce at least moderately creative work in some domain; social environment can influence both the level and the frequency of creative behaviour. (Amabile, Conti, Coon & Herron 1996).

Previous researches in this area were conducted in laboratory setting and on student samples. Foundation of research in this field started with the work of Amabile when she proposed a theory-based componential model of creativity in organizations in 1988, for this, she is considered pioneer researcher in this field. Work in organizational creativity expand in late 1990's with the work of Amabile and associates (1996), Shalley (1991, 1995), Woodman,Sawyer and Griffin (1993), Oldham and Cummings (1997) and many more. Major predictors were studied in these researches were intrinsic motivation, openness, risk taking, freedom, favourable work climate, and many more. Some demographic variables such as age was less studied in these researches and findings of these studies are very contradictory and confusing. Though, in most studies, age was found unrelated or negatively related with creativity.

Younger and less experienced managers are more likely to pursue creative strategies since older mangers dislike change from the status quo and show greater adherence to the norms of the organization (Hambrick & Mason, 1984). Work experience also gives individuals credibility as champions (Howell & Higgins, 1991) and makes them better able to navigate political coalitions in the organization (Chakrabarti, 1974). Rego, Machado, Leal and Cunha (2009) found negative relation (but not significant) between age and creativity. Amabile, Barsade, Mueller, and Staw (2005) also found same results as Rego et al. Choi (2007) found that age was positively related with creativity in individual analysis, but when data analyzed in terms of group, it was found a negative relationship; according to Choi (2007), it indicates that demographic composition variables have different individual- and cross level effects on individual employees' creative behaviour.

Meta-analytic researches on the relationship between age and creativity have shown that age is unrelated to creativity; some studies found no relationship between age and creativity. In a study, Mostafa (2005) found no significant difference between younger and older managers' creativity scores. Zhou (2003) also not found any significant relationship between age and creativity. Binnewies, Ohly, and Niessen (2008) found non-significant relationships between age and idea creativity; however, they found that job control and support for creativity moderate the relationship between age and idea creativity: age was positively related to idea creativity under high job control and negatively related to idea creativity under low job control and low support for creativity.

METHODS

Aim of the present study was to examine the relationship of chronological age with creativity of managerial personnel. Major researches were conducted to check the relationship between different personality traits, motivations and other organizational factors, but, demographical variables like age and gender were investigated in very limited studies, even these studies are showing contradictory findings. Some studies found chronological age positively associated with creativity and some other studies found an inverse relationship between these two. Though, in the present investigation it is hypothesised that "age would be negatively related with managers' creativity".

Participants:

The present study is conducted on 206 managers working in different private sectors organizations in India. Participants age ranged from 22-42 years (Mean = 30.80 and SD = 4.21); out of them, 134 were male and 72 female participants. As far as the occupation is concerned, managers working in some limited fields such as human resource, software, R&D, advertising, marketing, etc were selected for this study, since they get more opportunities to show the creativity, than the other regular fields of work, due to nature of their works.

Tools:

i. **Creative Behaviour Questionnaire (Mishra & Singh (2010):** To assess the creativity in the organizational work setting, creative behaviour questionnaire was administered on target sample. This scale was having 13 items in which 12 items were true keyed items and 1 was reverse keyed item. Items were to be rated on five-point rating scale namely, never, seldom, occasionally, often, and very often. High score indicates high creativity in managers. The internal consistency reliability of this scale was measured using the Cronbach's Alpha coefficient method and its value comes to be 0.80. Validity of this scale was checked by employee's immediate boss (correlation coefficient between these responses and boss ratings are found to be highly significant i.e., r= .39, pÂ.001).

The factor structure (principal component analysis with varimax rotation) of this scale was examined (N=206). The factor loading of 13 items were found above the set criteria for sample size more than 200 (i.e., .366). Three components solutions were found suitable to the scale which explained 49% of total variance.

ii. **Intrinsic Work Motivation Questionnaire (Mishra and Singh, 2009):** To assess intrinsic orientation of the work motivation, this tool was administered on target sample. This is a five-point Likert-type rating scale having total of 15 items. Responses are as strongly agree, agree, undecided, disagree, and strongly disagree. Out of 15, 13 items were true keyed items and 2 items were reverse keyed items. High score represents high intrinsic motivation towards work.

Reliability (by Chronbach's Alpha method) of this questionnaire was found to be 0.74. In factor structure (principal component analysis with varimax rotation) total of five components solutions were found suitable to the scale which explained 58% of total variance.

iii. **Demographic variables:** All the demographic variables for ex.: age, gender, nature of job, experience on present post and overall experiences were recorded by the researcher with the help of a proforma during the investigation.

Procedure and data analysis: In the present investigation, creativity of managerial personnel is treated as criterion variable and chronological age of the participant is treated as predictor variable. Since intrinsic work motivation is a dominant predictor of creativity so this variable and other demographic variable were treated as control variable. After finalizing the questionnaire, these were administered on target sample and responses were collected. To know the relationship between variables, bivariate correlation coefficient were computed. To partial-out the effects of intrinsic work motivation and other demographic variables, hierarchical regression analysis were computed where these control variables were entered in the

model in first block simultaneously and age was entered in second block.

RESULTS:

The following table is showing the correlation coefficient between age and other demographic variables and creativity (with its three dimensions). Results indicate that age is significantly negatively correlated with behavioural aspect of creativity (r = -.142, pÂ0.05) and overall creativity (r = -.151 pÂ0.05); direction of relationship with cognitive aspect and expertise in working area are also negative but value of correlation coefficient is non-significant. To know how much variance in creativity is accounted for by age, hierarchical regression analysis was performed with creativity as criterion variable, age as predictor variable and intrinsic work motivation and other demographic variables as control variable which is shown in table no. 02.

Table 02 is indicating that age is significantly and negatively associated with behavioural aspect dimension (β = -0.38 $p<0.01$), expertise in working field (β = -0.45 $p<0.01$) and overall creativity (β = - 0.40, $p<0.01$). It is also apparent from the table that age explain 24 percent of total variance in behavioural aspect, 21 percent of total variance in cognitive aspect, 14 percent of total variance in expertise in working area and 31 percent of total variance in overall creativity

DISCUSSION:

The objective of the present investigation was to examine the relationship of participant's chronological age with creativity in organizational setting. Results of correlation coefficient indicate that age is negatively correlated with overall creativity and behavioural aspect of creativity. Trend of relationship between cognitive aspect and expertise in working area are also negative but these correlations are not significant. Results of hierarchical regression analysis indicate that age significantly predicts behavioural aspect, expertise in working area and overall creativity. In the light of these results it can be concluded that age is adversely related with creativity; so, hypothesis of the present study is accepted here.

Based on the findings, it may be say that,as the person gets older he/she perceives himself/ herself less creative; as their age and work experiences increases, they show less creativity in their behaviour, however, their cognitive ability to produce creative ideas remain intact. Possible explanation of this phenomenon might be that when peoples are young, they feel mentally more energetic; they do not consider any situations as 'impossible' and try to resolve it. Because of their unfamiliarity with its pre-determined solutions, they look at every situation with different approach and show more creativity in their work. Lindauer (1984) accounts the intelligence behind age and address that younger person have a more fluid intelligence, which allows faster assimilation and manipulation of data which helps to think creatively. When they become older, they face relatively common types of problems/ situations during their job, and in result, having somewhat same solutions of these problems. Since, they had solved these situations effectively in previous try-outs, in order that, they show a strong tendency to stick to that solution only; they get comfortable with it and do not change the way of doing things; this situation called habitual fixation. This tendency of 'functional fixedness' plays detrimental role in creativity.

This explanation is supported by a study conducted by Wu, Cheng, Hoi Man, and McBride-Chang (2005). They reported in their study that 'functional fixedness' may occur in knowledge-learn tasks. Older personnel usually spend more time in

TABLE 1:
SUMMARY OF THE CORRELATION COEFFICIENT BETWEEN AGE, GENDER, JOB TENURE, TOTAL WORK EXPERIENCE, INTRINSIC WORK MOTIVATION AND CREATIVITY.

Predictors/ Criterion variables	Coefficients			
	Behavioural Aspect	Cognitive Aspects	Expertise in working area	Total Creativity
Age	-0.14*	-0.10	-0.11	-0.15*
Gender	-0.02	-0.05	-0.11	-0.06
Job Tenure	-0.01	-0.18**	0.10	-0.08
Total Work Experience	-0.09	-0.11	-0.01	-0.11
Intrinsic Motivation	0.43**	0.37**	0.29**	0.48**

TABLE 02:
SUMMARY OF HIERARCHICAL REGRESSION ANALYSIS FOR AGE AS PREDICTOR, CREATIVITY AS CRITERION AND JOB TENURE, TOTAL WORK EXPERIENCE AND INTRINSIC MOTIVATION AS CONTROL VARIABLE.

Variables	**Dependent Variable (creativity)**							
	Behavioural Aspect		**Cognitive Aspect**		**Expertise in working field**		**Overall Creativity**	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
(Control Variable)								
Gender	-0.05	-0.01	-0.08	-0.06	-0.14*	-0.09	-0.10	-0.05
Job Tenure	0.07	0.05	-0.14*	-0.16*	0.16*	0.13	0.00	-0.02
Total work experience	-0.20**	0.14	-0.11	0.08	-0.14	0.26	-0.19	0.16
Intrinsic Motivation	0.41**	0.39**	0.32**	0.31**	0.28**	0.26**	0.44**	0.42**
(Independent Variables)								
Age		-0.38**		-0.21		-0.45**		-0.40**
F[a]	11.84**	11.54**	11.66**	10.19**	5.48**	6.43**	16.66**	16.16**
F Change	11.84**	7.98**	11.66**	2.40	5.48**	9.99**	16.66**	9.96*
Overall R^2	0.23	0.26	0.48	0.49	0.12	0.16	0.29	0.33
Adjusted R^2	0.21	0.24	0.21	0.21	0.10	0.14	0.28	0.31
R^2 Change	0.23	0.03	0.23	0.01	0.12	0.04	0.29	0.03

df : Step 1= 5, 200 Step 2= 6, 199, *pÂ0.05 **pÂ0.01

Standardized β is reported in the table.

defending their decisions rather than construct it more effective further. In addition, increased family and organizational responsibilities by increasing age give them less time to concentrate on their work resulting in low creativity. Increased time pressure was well studied in some studies and show that it has negatively related with creativity. For ex. a study was conducted by Amabile, Mueller, Simpson and

Hadley (2002) on those participants working on projects where creativity was most essential and desirable element of the job. They recorded data of participant's creative-cognitive ability on daily basis and found that time-pressure negatively predict creative-cognitive processing; this relationship was not even mediated by intrinsic motivation.

CONCLUSION:

It is found in the present study that chronological age of a personnel is negatively associated with creative behaviours in the organizations. It is recommended, based on the finding, that higher authorities of the organizations should be concerned with their manager's age range and try to rotate them and motivate them consistently within the hierarchy. While decision making, authorities must include younger personnel in the decision-making process. It was reported in some studies that creativity can be enhance by training (Scott, Leritz, & Mumford, 2004), so management should train their employees in regular basis, at least for those where creativity is key for their success.

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