

CREATIVITY AND DECISION MAKING STYLES: A STUDY OF ASSOCIATES WORKING IN NATIONAL CAPITAL REGION OF INDIA

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The present study is intended to examine the relationship between creativity levels of employees and their decision making styles. A quantitative research design has been employed for this study. A 2 X 4 X 3 factorial design (with unequal numbers) was planned. Two levels of creative associates (highly creative & less creative), four different sectors service (IT), manufacturing (Automobile), consumer durables (FMCG) and petrochemical (Petroleum) were taken. Under each single unit three levels of associates i.e. senior level, middle level and entry level were taken. A sample of 400 employees was selected using stratified systematic sampling. The data was collected with the help of Abbreviated Torrance Test of Creativity for Adults and Decision Making Style Questionnaire. The results show that the employees scoring high on Directive Decision Making (DDM) have shown strength of association with CR, NR and total creativity. Employees scoring high on Thinking Decision Making (TDM) have shown a strength of association with total creativity. Employees scoring high on Analytical Decision Making (ADM) have shown a strength of association with CR, NR, total creativity and CR verbal response. Employees scoring high on Impulsive Decision Making (IDM) have shown strength of association with CR creativity and NR elaboration. And finally, employees scoring high on 27 ICFWO 2017 Rational Decision Making (RDM) have shown a strength of association with CR verbal, CR figural and NR fluency. The two way MANOVA revealed that creativity levels, interaction between creativity level and managerial level, interaction between creativity level and sectors, and finally the interaction between creativity level, managerial level and sectors impacted significantly on the combined dependent variable of decision making style. Further scrutiny of the MANOVA according to each variable shows that DDM, TDM, IDM and RDM styles of decision making are significantly different according to creativity level. According to creativity level and managerial level, there was a significant difference in DDM style of decision making only.

According to creativity level and sectors there was a significant difference between DDM and RDM. According to creativity level, managerial level and sectors there was a significant difference in IDM style of decision making only.

Keywords: creativity, rational thinking, directive, analytical, impulsive

INTRODUCTION

“Critical Thinking narrows and creative thinking expands, but they must work in tandem for problem solving and decision making.”

Pearl Zhu

Creativity

Arieti in the year 1976 emphasized that whether it is considered from the perspective of its impacts on society, or as one of the outflows of the human soul, creativity emerges as a movement to be contemplated, esteemed and developed. Halley and Gilson in 2004 after looking at the progressively turbulent scenario, competitive environment, unpredictable situations said that managers have come to realize that they need to encourage creativity among their employees.

Dr. E. Paul Torrance in 1993 gave a comprehensive definition of creativity, wherein he said that it is a process of becoming sensitive to problems, shortcomings, gaps in awareness, missing elements, disharmonies, and so on. It is identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies, testing and retesting these hypotheses and possibly modifying the same and finally communicating the end results.

Creativity and Decision Making

Simon in the year 1960, equated decision making to managing. In fact, 90 percent of managerial activity relates to decision making, so Peter Drucker also equated management to decision making. Kaur (1993) stated that efficiency of an organization depends largely on the decision making style of managers. Rowe & Mason (1987) was of the opinion that the personality of an individual determines the decision making style.

Decision making term has been variously interpreted. Harrison in the year 1981, defined decision as a moment in a continuous process of assessing various alternatives related to a goal, at which the expectation of decision maker with regard to a particular course of action impels him to make a selection. Duncan in 1973 had already stated that the decision is a conscious choice to behave or to think in a particular way in a special situation.

Creativity in decision making has a crucial role as alternative creation is one of the decision maker's main activities which leads to new solutions (Forgionne and Newman, 2007; Pennington and Hastie, 1988).

REVIEW OF LITERATURE - CREATIVITY AND DECISION MAKING

Zubair, Bashir, Abrar, Baig and Hassan (2015) examined the relationships among employee's participation in decision making (PDM) and their manager's encouragement of creativity (MEOC) and their actual creativity (CTY). Data were collected from various sources and a total of 206 employees and their managers participated in the final survey. The outcomes indicated that the employee's contribution in decision making and manager's encouragement of creativity were positively related to employee's creativity level.

Muindi, F.K. (2011) found from their work that participative Decision Making is positively related with organization commitment, job satisfaction, motivation and performance and this increases creativity as well.

Christensen and Jønsson (2011) concluded from their research that participation in decision making leads to creativity and innovation in work groups and organizations.

Guisseppi Forgionne and John Newman (2007) from their research suggested that creativity can improve and encourage the performance of people in a variety of tasks, including decision-making. They stated that creativity can assist in problem design and it can further assist in identifying relevant novel solutions. They researched and at the end concluded that creativity enhancements can be delivered through a decision-making support system.

Pissarra and Jesuino in 2005 with the help of their research could say that creativity can improve the performance of people in variety of tasks which includes decision making. They further added that creativity can assist decision makers in problem design by helping them identify relevant alternatives during the design phase of the desion making process.

Few documented theories exist with the help of which it has been claimed that the link between creativity and decision making do exist, but clear causal theories and investigational evidence of the strength of such theories remain relatively few.

Table 2.1 Creativity and Decision making

Dimension	Studies
Positive relation between Creativity and Decision making	Zubair, A., Bashir, M., Abrar, M., Baig, S.A. and Hassan, S.Y. (2015); Muindi, F.K. (2011); Forgionne and Newman (2007); Kilgour (2006); J. Pissarra and J.C. Jesuino (2005); G.D. Hughes (2003); N.Y. Conteh and G.A. Forgionne (2003a); De Dreu & West (2001); J.P. Shim, M.Warkentin , J.F. Courtney , D.J. Power, R. Sharda and C. Carlsson, (2002); K.M. Hilmer (2000) ; B. Shneiderman (2000); Ford (2000); Malaga (2000).

RATIONALE OF STUDY

Creativity is an important topic in managerial research. If today we try to develop the creative potential of our employees, in the coming times, and for hundreds of years we will reap the benefits of such a cultivation. And the effect is so widespread that it will start from the individual will spread over to companies and then to the national levels.

Substantial evidence indicates that employee creativity can essentially add to organizational advancement, efficiency, and continued existence.

Keeping in view this importance of employee creativity as an indispensable attribute for the sustainable growth of any organization the present study is designed.

OBJECTIVES OF THE STUDY

1. To find out the effect of various components of creativity on decision making style (DDM (Directive Decision Making), TDM (Thinking Decision Making), IDM (Impulsive Decision Making), ADM (Analytical Decision Making) and RDM (Rational Decision Making)) of employees in an organization.
2. To understand the systematic differences between creativity levels, interaction between creativity level and managerial level, interaction between creativity level and sectors, and finally the interaction between creativity level, managerial level and sectors on one hand and its impact on the combined dependent variable of decision making style on the other hand.

RESEARCH METHODOLOGY

Research Design

The present research is an attempt to make a comparative analysis of highly creative and less creative associates in relation to their decision making styles. A 2 X 4 X 3 factorial design (with unequal numbers) (Figure 5.1) was planned. Two levels of creative associates (highly creative & less creative), four different sectors (service, manufacturing, consumer durables and petrochemical) were taken. Under each single unit three levels of associates i.e. senior level, middle level and entry level were taken.

Sample distribution

The present study was conducted on a sample of 400 associates drawn from four different sectors. The sample of 400 associates was divided into 200 highly creative and 200 less creative. Out of this sample, 100 associates were taken from manufacturing sector, 100 from service, 100 from consumer durables and 100 from petrochemical sector (Figure 5.2). The technique of stratified systematic sampling was adopted in selecting samples from middle level and entry level management. However for senior management random sampling was used since stratified systematic sampling was not possible for them. The senior level management consisted of managers having experience of more than 25 years, middle level had work experience of seven to 25 years and entry level managers had work experience of 1 to 7 years.

Hypothesis

H₁: Highly creative associates follow TDMS (Thinking Decision Making Style), ADMS (Analytical Decision Making Style), RDMS (Rational Decision Making Style) in comparison to less creative associates who follow IDMS (Impulsive Decision Making Style) and DDMS (Directive Decision Making Style).

H₂: Highly creative associates of all the sectors prefer to use RDMS, TDMS and ADMS in comparison to less creative associates of various sectors who follow IDMS and DDMS.

H₃: Highly creative associates at all the managerial levels would prefer to use RDMS, TDMS and ADMS in comparison to less creative associates at all the managerial level who would use IDMS and DDMS.

Survey Instruments

The following tests were used in the study:

1. Abbreviated Torrance Test for Adults (Goff & Torrance, 2002)
2. Decision Making Style Questionnaire (designed by Prof. Anu Singh Lather and Ms. Anju Shukla)

Abbreviated Torrance Test for Adults (Goff & Torrance, 2002)

Abbreviated Torrance Test for Adults (ATTA) was developed by Goff & Torrance in the year 2002. The ATTA is comprised of one verbal and two figural exercises and respondents are given 3 minutes to answer each question.

Responses to the three questions in the ATTA are scored under two categories: Norm Referenced (NR) measures and Criterion – Referenced (CR) measures.

The norm referenced measures are those that are exhibited in every response to some varying degree. The norm referenced measures assess the following four areas: fluency, originality, elaboration and flexibility.

The criterion – referenced creativity indicators, may or may not be evidenced on any given record. In all, there are fifteen CR indicators. The first five criterion referenced creativity indicator are for question #1 and these are: richness and colorfulness of imagery, emotion/feelings, future orientation, humor and provocative questions. The next 10 CR measures are for questions #2 and #3 and these are : openness, unusual visualization, movement and/or sound, richness and/or colorfulness of imagery, abstractness of titles, context, combination/synthesis of two or more figures, internal visual perspective, expressions of feelings/ emotions and fantasy.

Reliability

Test reliability of the raw scores representing composite scores on the ATTA can be evidenced by the KR21 reliability coefficient (Goff & Torrance, 2002). The KR21 reliability coefficients for the ATTA were: “fluency = .45; originality = .38; elaboration = .84; flexibility = .38 and total creativity indicators = .69” (Goff & Torrance, p. 35).

Another important form of reliability is called rater reliability, which ranges from .95 to .99 (Goff and Torrance, 2002).

Validity

The ATTA was developed from the TTCT and both content and face validity have been established by the Scholastic Testing Service (Goff & Torrance).

Decision Making Style

This test was designed by the Prof. Anu Singh Lather and Ms. Anju Shukla. The purpose of this test is to find out the decision making styles of the associates. This test is administered individually. It is a 25 item scale, of which 8 items relate to directive decision making, 4 items relate to thinking decision making, 6 items relate to analytical decision making, 4 items relate to impulsive decision making and 3 items relate to rational decision making. The explanation of the five decision making styles are :

Rational Decision Making Style (RDMS) - is a precise, formal, unbiased, analytical process based on objective data .

Thinking Decision Making Style (TSDM) - prefers to use mental ability to preside over daily activities, for reasoning purposes, for understanding and solving problems as well.

Directive Decision Making Style (DDMS) - relies on a rational (but short term perspective) and autocratic style which results in the employee using his own

knowledge, experience and judgment to choose the best alternative.

Analytical Decision Making Style (ADMS) - uses direct observation, facts and data to arrive at the best alternative from among the available ones.

Impulsive Decision Making Style (IDMS) - act on impulse/instinct that mostly relies on affective and physiological cues present in the immediate environment.

It takes approximately 15 minutes to complete this test and can be administered both individually and in group.

Reliability

The reliability coefficient was calculated for the scale and the Cronbach Alpha was found to be 0.748 and the Spearman Brown Coefficient was found to be 0.806.

Validity

The test has high face validity.

RESULTS AND DISCUSSION

Step wise Regression Analysis

Step wise regression analysis was applied to understand which all components of creativity have an impact on the dependent variables of study. The results and discussion are presented in following section:

Creativity and Directive Decision Making Style(DDMS)

The result (Table 6.1) shows that, employees scoring high on DDM have shown a strength of association with CR

creativity ($R^2 = 0.069$), NR creativity ($R^2 = 0.141$) and total creativity ($R^2 = 0.187$), the B score for CR Creativity is .102 at a Sig. level of .000. , this means that for every unit increase in the CR creativity score, there will be a .102 unit increase in the DDM score holding all other variables constant. Similarly for every unit increase in total creativity , there will be 0.348 unit increase in DDM score with sig. level of 0.000. But as far as NR creativity is concerned, it has a negative coefficient score, which means that for every unit increase in NR creativity, DDM score will decrease by 0.027 (Sig. = 0.000) unit. This result shows that employees having a high score on directive decision making relies more on a rational (but short term perspective) and autocratic style of taking decisions , which is a result of employees using his own knowledge, experience and judgment to choose the best alternative from the available alternatives. These employees have shown a positive strength of association with CR creativity which means that these employees evidence a strength, variety and vividness in their imagination. They are very expressive and have future orientation. People having a high CR creative score have a resistance to premature closure. They have the ability for unusual visualization and looking at things from different perspectives. They have the ability of going beyond exteriors. Employees high on CR creativity are also able to communicate clearly and powerfully. These people can fantasize and have shown a high affection score. They have a negative association with NR creativity, which means that respondents have a low score on fluency, originality, elaboration and flexibility. These employees have a

positive strength of association with total creativity, which means that these employees are very sensitive towards problems, have redefining abilities, which include transformations of thought, reinterpretations, and freedom from functional fixedness in driving unique solutions.

Creativity and Thinking Decision Making Style (TDMS)

The result (Table 6.1) shows that, employees scoring high on TDM have shown a strength of association with total creativity ($R^2 = 0.071$), the B score for total creativity is .033 at a Sig. level of .000, this means that for every unit increase in the total creativity score, there will be a .033 unit increase in the TDM score holding all other variables constant. This result shows that employees having a high score on thinking decision making style prefers to use mental ability to preside over daily activities, for reasoning purposes, for understanding and solving problems as well. These employees have a positive strength of association with total creativity which means that these employees are very sensitive towards problems, have redefining abilities, which include transformations of thought, reinterpretations, and freedom from functional fixedness in driving unique solutions. The results also reveal that thinking decision making style does not show any strength of association with NR creativity and CR creativity.

Creativity and Analytical Decision Making Style (ADMS)

The result (Table 6.1) shows that, employees scoring high on ADM have shown a strength of association

with CR creativity ($R^2 = 0.104$), NR creativity ($R^2 = 0.134$), total creativity ($R^2 = 0.167$) and CR verbal response ($R^2 = 0.181$). The B score for CR Creativity is .136 at a Sig. level of .000, this means that for every unit increase in the CR creativity score, there will be a .136 unit increase in the ADM score holding all other variables constant. Also, the B score for CR verbal response is .109 at a Sig. level of .010, this means that for every unit increase in the CR verbal response, there will be a .109 unit increase in the ADM score holding all other variables constant. Similarly for every unit increase in total creativity, there will be .321 unit increase in ADM score with sig. level of 0.000, but as far as NR creativity is concerned, it has a negative coefficient score, which mean that for every unit increase in NR creativity, ADM score will decrease by 0.019 (Sig. = 0.000) unit.

This result shows that employees who have a high score on analytical decision making style uses direct observation, facts and data to arrive at the best alternative from among the available ones. These employees have scored a positive strength of association with CR creativity, which means that they show variety, vividness, richness and colorfulness of imagination in their responses. The respondents with high CR creativity look at an object from unusual perspectives and do not leap to conclusions prematurely. These employees have also shown a positive strength of association with CR verbal response, which means that their responses have richness and colorfulness of imaginations. The same employees have shown a negative strength of association with NR Creativity, which means

that respondents have a low score on fluency, originality, elaboration and flexibility. The employees have shown a positive strength of association with total creativity, which indicates that employees are very sensitive towards problems, have redefining abilities, which include transformations of thought, reinterpretation and freedom from functional fixedness in driving unique solutions.

Creativity and Impulsive Decision Making Style (IDMS)

The result (Table 6.1) shows that, employees scoring high on IDM have shown a strength of association with CR creativity ($R^2 = 0.230$) and NR elaboration ($R^2 = 0.252$). The B score for CR Creativity is .212 at a Sig. level of 0.000, this means that for every unit increase in the CR creativity score, there will be a .212 unit increase in the IDM score holding all other variables constant. But as far as NR elaboration is concerned it has shown a negative coefficient score of .042 at a Sig. level of .000, this means that for every unit increase in NR elaboration score, there will be a .042 unit increase in the IDM score holding all other variables constant. The results also reveal that impulsive decision making style does not show any strength of association with total creativity and NR creativity.

This result shows that employees who have a high score on impulsive decision making style act on impulse or instinct that mostly relies on affective and physiological cues present in the immediate environment. These employees have a positive strength of association with CR creativity which means that their response

may evidence a strength, variety and vividness of the imaginary. These employees have a negative strength of association with NR elaboration which means that, these people are not very comfortable in producing quantities of ideas relevant to task instructions.

Creativity and Rational Decision Making Style (RDMS)

The result (Table 6.1) shows that, employees scoring high on RDM have shown a strength of association with CR verbal response ($R^2 = 0.065$), CR figural response ($R^2 = 0.081$) and NR fluency ($R^2 = 0.093$). The B score for CR verbal response is 0.210 at a Sig. level of .000, this means that for every unit increase in the CR verbal response score, there will be a .210 unit increase in the RDM score holding all other variables constant. Also, the B score for CR figural response is .064 at a Sig. level of .008, this means that for every unit increase in the CR figural response, there will be a .064 unit increase in the RDM score holding all other variables constant. But as far as NR fluency is concerned, it has a negative coefficient score, which mean that for every unit increase in NR fluency, RDM score will decrease by 0.044 (Sig. = 0.024) unit.

The results (Table 6.1) show that, employees scoring high on RDM have not shown any strength of association with total creativity, NR creativity and CR creativity.

This result shows that employees who have a high score on rational decision making style follow a precise, formal, unbiased, analytical approach towards decision making which is based on objective data. The results reveal that employees having a high score on RDM have not shown any strength of association with total creativity, NR creativity and CR creativity.

These employees have a positive strength of association with CR verbal response which means that the employees are able to communicate very clearly and powerfully their thoughts, also they are able to give sufficient details.

These employees have a positive strength of association with CR figural response which means that their responses show Openness, Unusual Visualization, Movement and/or Sound, Richness, and/or Colorfulness of Imagery, Abstractness of Titles, Context, Combination/Synthesis of Two or More Figures, Internal Visual Perspective, Expressions of Feelings and Emotions, Fantasy..

These employees have a negative strength of association with NR fluency which means that they do not have the capability of producing multiple ideas or alternate solutions to a problem.

Table 6.1: Stepwise regression of Employee Creativity on Decision Making Styles

				Un standardized Coefficients		Standardized Coefficients	T	Sig.
	F (sig)	R ²	Adjusted R ²	B	Std. Error	Beta		
DDMS								
Total Creativity	45.280 (.000)	.187	.181	.348	.074	6.549	4.733	.000
NR Creativity		.141	.136	-.027	.005	-.450	-5.733	.000
CR Creativity		.069	.067	.102	.019	.264	5.445	.000
TDMS								
Total Creativity	30.431 (.000)	.071	.069	.033	.006	.267	5.516	.000
NR Creativity		No significant relation						
CR Creativity		No significant relation						
ADMS								
Total Creativity	29.142 (.000)	.167	.161	.321	.081	5.546	3.961	.000
NR Creativity		.134	.130	-.019	.005	-.294	-3.735	.000
CR Creativity		.104	.102	.136	.020	.322	6.796	.000
CR Verbal Response		.181	.175	.109	.042	.125	2.575	.010
IDMS								
Total Creativity	66.956 (.000)	No significant relation						
NR Creativity		No significant relation						
CR Creativity		.230	.228	.212	.019	.479	10.900	.000
NR Elaboration		.252	.248	-.042	.012	-.180	-3.444	.001
RDMS								
CR Verbal Response	13.579 (.000)	.065	.063	.210	.040	.255	5.270	.000
CR Figural Response		.081	.077	.064	.024	.133	2.651	.008
NR Fluency		.093	.086	-.044	.019	-.134	-2.269	.024
Total Creativity	No significant relation							
NR Creativity	No significant relation							
CR Creativity	No significant relation							

Multivariate Analysis of Variance (MANOVA)

The technique of multivariate analysis of variance (MANOVA) has been found to be suitable to bring out systematic differences amongst the employees. A significant multivariate F value allows one to conclude with confidence that the groups do indeed differ among themselves at least in some of the variables.

Creativity and Decision Making

The two way MANOVA (Table 6.2) revealed that creativity levels impacted significantly on the combined dependent variable of decision making style with Wilks' Lambda = .773, F value (5,372) = 21.868 and significance value = .000. The interaction between creativity level and managerial level impacted significantly on the combined dependent variable of

decision making style with Wilks' Lambda = .948, F value (10,744) =2.016 and significance value = .029. The interaction between creativity level and sectors impacted significantly on the combined dependent variable of decision making styles with Wilks' Lambda = .903, F value (15,1.027E3)

=2.591 and significance value = .001. The interaction between creativity level, managerial level and sectors impacted significantly on the combined dependent variable of decision making styles with Wilks' Lambda = .879, F value (30,1.490E3) =1.629 and significance value = .018.

Table 6.2: Summary of Multivariate Tests for Decision making style according to creativity level, sectors and managerial levels.

Effect	Value	F	Df	Error df	Sig.
Creativity	.773	21.868 ^a	5.000	372.000	.000
Creativity *Managerial Level	.948	2.016 ^a	10.000	744.000	.029
Creativity*Sector	.903	2.591	15.000	1.027E3	.001
Creativity level*Managerial level*Sectors	.879	1.629	30.000	1.490E3	.018

Note: Only Significant Results are quoted

Creativity*Managerial Level = Interaction between Creativity and Managerial level

Creativity*Sector = Interaction between Creativity and Sectors

Creativity*Managerial Level *Sectors = Interaction between Creativity, Managerial level and Sectors

The further scrutiny of the MANOVA table (Table 6.3) according to each variable shows that DDM, TDM, IDM and RDM styles of decision making are significantly different according to creativity levels. According to creativity levels and managerial levels there is a significant

difference in DDM style only. According to creativity levels and sectors there is a significant difference in DDM and RDM. According to creativity levels, managerial levels and sectors there is a significant difference in IDM style of decision making only.

Table 6.3: Summary of Analysis of Variance for All Factors of decision making according to the Creativity levels, Sectors and Managerial levels.

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Creativity	DDM	10.980	1	10.980	4.008	.046
	TDM	118.535	1	118.535	32.245	.000
	IDM	117.134	1	117.134	34.484	.000
	RDM	17.967	1	17.967	5.903	.016
Creativity *Managerial level	DDM	27.277	2	13.638	4.978	.007

Creativity * Sector	DDM	30.854	3	10.285	3.754	.011
	RDM	55.783	3	18.594	6.109	.000
Creativity level * Managerial level * Sector	IDM	48.818	6	8.136	2.395	.028

Note: Only Significant Results are quoted

*Creativity*Managerial Level = Interaction between Creativity and Managerial level*

*Creativity*Sector = Interaction between Creativity and Sectors*

*Creativity*Managerial Level *Sectors = Interaction between Creativity, Managerial level and Sectors*

Analysis of the mean table (Table 6.4) shows that highly creative associates have scored high on Thinking Decision Making Style (TDMS), Analytical Decision Making Style (ADMS) and Impulsive Decision Making Style (IDMS). This means that highly creative associates take decision by using their mental ability, observations or may even act on impulse or instinct. Less creative associates have shown a higher score on Directive Decision Making Style (DDMS) and Rational Decision Making Style (RDMS), which means that less creative employees follow analytical, formal, precise and autocratic style of decision making. This means that less creative associates follow a set procedure without much flexibility and scope of deliberations. The ultimate aim is to optimize or maximize result.

Table 6.4: Mean Scores of Creativity for the Factors of Decision making

Dependent Variable	Less Creative	Highly Creative
DDMS	6.094	5.667
TDMS	5.183	6.589
ADMS	5.733	5.956
IDMS	5.175	6.572
RDMS	6.089	5.542

Analysis of the mean table (Table 6.5) shows that less creative associates of all the sectors except FMCG have scored high on DDMS, which means that less creative associates of all the sectors except FMCG, rely on short term rational decision making which means that employee uses his own knowledge, experience and judgment to make decisions, while the same is not true for highly creative associates of FMCG who have scored low on DDMS.

The results show that highly creative employees of all the sectors have scored high on TDMS, which mean that highly creative employees in all the sectors prefer to use their mental ability for understanding, reasoning and then arriving at a solution.

The results show that highly creative employees of all the sectors except Petroleum have scored high on ADMS, which means that they rely on facts and figures to reach at the best possible alternative. This is not the case with the highly creative employees of petroleum sector who have scored low on ADMS.

The results show that highly creative employees in all the sectors have scored high on IDMS except for

the employees of FMCG sector, which means that highly creative employees of all the sectors may take their decision based on physiological and affective cues, they don't give a great deal of thought and often fail to plan for a longer period of time, but this is not the case with highly creative employees of FMCG sector, this means that they have a foresightedness while making a decision.

The results reveal that less creative associates in Automobile and Petroleum, have scored high on RDMS, which means that less creative employees of these sectors follow an unbiased, structured and formal approach to arrive at a decision. The same is not true for less creative employees of FMCG and IT sector who have got a low score on RDMS which means that highly creative associates of FMCG take a logical, analytical approach towards decision making.

Table 6.5: Mean Scores of Creativity X Sector for All Factors of Decision making styles

Dependent Variable	Sector	Less Creative	Highly Creative
DDMS	Automobile	5.967	4.789
	IT	6.311	5.289
	FMCG	6.178	6.767
	Petroleum	5.922	5.822
TDMS	Automobile	5.556	6.200
	IT	5.200	6.356
	FMCG	5.156	7.456
	Petroleum	4.822	6.344
ADMS	Automobile	5.156	5.278
	IT	5.933	6.311
	FMCG	5.789	6.711
	Petroleum	6.056	5.522
IDMS	Automobile	4.922	6.067
	IT	5.178	6.044
	FMCG	5.544	7.667
	Petroleum	5.056	6.511
RDMS	Automobile	6.122	5.267
	IT	5.378	5.400
	FMCG	5.578	6.178
	Petroleum	7.278	5.322

Analysis of the mean table (Table 6.6) shows that less creative managers at middle and senior levels have scored high on DDMS, which means that managers at these two levels adopt a short term rational approach which can also be called as somewhat autocratic style, where in the managers take decision based on his level of knowledge and understanding, which is not true for highly creative managers at entry level. This may be because at the entry level the managers may not have that level of understanding and experience to take a directive style of decision.

The results show that highly creative managers at all the three level (entry, middle and senior) have scored high on TDMS. This means that highly creative managers use their intellectual capability for solving a problem and arriving at the conclusion. This may be explained by the fact that highly creative managers are confident about their mental capability, also these people provide alternate perspective towards the same problem.

The results show that highly creative managers at all the levels have scored high on ADMS, which means that highly creative managers use data, facts and observable methods to arrive at a decision, no matter that this style may consume good amount of time, but the decisions arrived at are worth it.

The results also show that highly creative managers at all the levels have scored high on IDMS, which means that highly creative managers at all level may take decision based on some physiological clues or some sort of instincts. They don't give a good amount of thinking to the problem and are not so forward looking.

The results show that less creative employee at all levels of management have scored higher on RDMS, which means that managers with lower level of creativity like to explore all possible opportunities, deliberate and discuss on the problem in hand before arriving at a solution. This may be because they don't want to face any kind of unpleasant situation later and want to be very sure of their decision.

Table 6.6 : Mean Scores of Creativity X Level of Management for All Factors of Decision making

Dependent Variable	Level of Management	Less Creative	Highly Creative
DDMS	Entry level management	6.117	6.233
	Middle level management	6.317	5.267
	Senior Level Management	5.850	5.500
TDMS	Entry level management	5.250	6.750
	Middle level management	5.200	6.417
	Senior Level Management	5.100	6.600
ADMS	Entry level management	5.800	6.017
	Middle level management	5.650	5.650
	Senior Level Management	5.750	6.200

	Entry level management	5.575	6.650
IDMS	Middle level management	5.050	6.517
	Senior Level Management	4.900	6.550
	Entry level management	6.067	5.942
RDMS	Middle level management	5.950	5.133
	Senior Level Management	6.250	5.550

An analysis of the mean table (Table 6.7) for DDMS shows a particular trend, if we observe the results we would see that less creative managers at all levels (except entry level in automobile sector and senior level in petroleum sector) in automobile, IT and petroleum sectors have shown a higher score on DDMS. This means that these managers adopt an intuitive, rational approach which can also be called as somewhat autocratic style, where in the managers take decision based on his own level of knowledge and understanding of the problem. But the case is different if we see the FMCG sector, where highly creative managers at all the levels (entry, middle and senior) have scored higher on DDMS. This means that highly creative managers in FMCG adopt somewhat rational and autocratic style of making decision.

The analysis of the table shows that highly creative manager at all levels (entry, middle and senior) except senior level in automobile sector, and in all four sectors (Automobile, IT, GMCG and Petroleum) have shown a higher score on TDMS. This means that highly creative managers use their mental capability for solving a problem and arriving at the conclusion. This may be explained by the fact that highly creative managers are confident about their intellectual capabilities and they

can provide alternate perspectives towards the same problem which ultimately helps to arrive at a better solution. The only exception to these results are the highly creative managers at the senior level who have scored low on TDMS, this may be because of the fact that at senior level, the managers need to consult the top authorities for major decision making which involves strategic issues and which should not be dealt at the individual level, without consulting other authorities.

The analysis of the table (Table 6.7) shows that less creative associates in automobile, IT and petroleum sectors at all the managerial levels (except senior level in automobile, IT and entry level in petroleum sector) have shown a higher score on ADMS, which means that these managers use facts, data and direct observations to arrive at a decision. The exceptions are less creative managers at senior level in automobile and IT sectors who have scored low on ADMS, this may be because of the fact that at senior level apart from the facts, data and direct observation, they may also rely on their personal experience and instincts which they have gathered from their wide experience. Also, less creative managers at entry level in petroleum have scored low on ADMS, which may be because of the fact that in this sector not much of decision making is done at

this level. The result show that highly creative individuals at all the three managerial levels in FMCG sector have scored high on ADMS, which means that managers take decisions based on the factual information available, data collected by surveys and direct observation methods. This may be because of the fact that FMCG sector is the one which brings about a lot of changes, improvements, innovations in their products and services as per consumers demand. And these inputs on the consumer demands is obtained by a lot of research conducted to know the changing preferences and tastes of the buyers, so the score of highly creative managers is high on ADMS.

The analysis of the table (Table 6.7) shows that highly creative associates in all the sectors at all the managerial levels (except senior level managers in automobile sector) have scored higher on IDMS, this means that the managers act on physiological clues, instincts and impulses. They don't take decisions with a lot of thinking and deliberations. The only exception to this is the score of highly creative managers at senior level, who have scored low on IDMS, this may be because of the fact that in Automobile sector, decisions cannot be taken on instinct and impulses because it requires technical expertise along with experience and knowledge.

Further, the table (Table 6.7) shows that less creative associates at the three managerial levels in Automobile and Petroleum sector have scored higher on RDMS (and highly creative associates have scored low) which means that the managers at all the levels in these sectors follow objective, formal , well defined and unbiased approach towards decision making. It is a sound and multi step process for systematically selecting the best option from all the available choices. It seeks to maximize the gains. This may be because of the fact that in these two sectors there are set procedures and systematic rules which govern the decision making process, hence the managers with less creativity level are comfortable in such style of decision making giving a higher score. The results also communicate that highly creative managers in IT and FMCG sectors at all the three levels of management (except middle level in IT sector) have scored high on RDMS, which means that managers in these sectors follow multi step, systematic, formal and precise procedures. This is a deviation from the normal trend, where it is observed that highly creative managers do not follow a very systematic and routine process.

Table 6.7: Mean Scores of Creativity X Level of Management X Sector for All Factors of decision making

Dependent Variable	Sectors	Level of Management	Less Creative	Highly Creative
DDMS	Automobile Sector	Entry level management	6.233	6.767
		Middle level management	6.067	4.400
		Senior Level Management	5.600	3.200
	IT Sector	Entry level management	6.400	5.933
		Middle level management	6.133	4.133
		Senior Level Management	6.400	5.800
	FMCGSector	Entry level management	5.600	6.100
		Middle level management	6.933	7.200
		Senior Level Management	6.000	7.000
	Petroleum Sector	Entry level management	6.233	6.133
		Middle level management	6.133	5.333
		Senior Level Management	5.400	6.000
TDMS	Automobile Sector	Entry level management	5.600	6.400
		Middle level management	5.267	7.000
		Senior Level Management	5.800	5.200
	IT Sector	Entry level management	5.200	6.667
		Middle level management	5.400	5.400
		Senior Level Management	5.000	7.000
	FMCGSector	Entry level management	5.133	7.033
		Middle level management	4.933	7.133
		Senior Level Management	5.400	8.200
	PetroleumSector	Entry level management	5.067	6.900
		Middle level management	5.200	6.133
		Senior Level Management	4.200	6.000
ADMS	AutomobileSector	Entry level management	5.733	5.567
		Middle level management	5.933	5.467
		Senior Level Management	3.800	4.800
	IT Sector	Entry level management	6.067	6.000
		Middle level management	5.533	5.333
		Senior Level Management	6.200	7.600
	FMCGSector	Entry level management	5.767	6.400
		Middle level management	5.200	6.733
		Senior Level Management	6.400	7.000
	PetroleumSector	Entry level management	5.633	6.100
		Middle level management	5.933	5.067
		Senior Level Management	6.600	5.400

Dependent Variable	Sectors	Level of Management	Less Creative	Highly Creative
IDMS	AutomobileSector	Entry level management	4.700	7.067
		Middle level management	4.667	5.933
		Senior Level Management	5.400	5.200
	IT Sector	Entry level management	5.667	5.667
		Middle level management	4.867	5.467
		Senior Level Management	5.000	7.000
	FMCGSector	Entry level management	6.033	7.267
		Middle level management	5.200	8.333
		Senior Level Management	5.400	7.400
	PetroleumSector	Entry level management	5.900	6.600
		Middle level management	5.467	6.333
		Senior Level Management	3.800	6.600
RDMS	AutomobileSector	Entry level management	6.367	5.600
		Middle level management	6.000	5.200
		Senior Level Management	6.000	5.000
	IT Sector	Entry level management	5.467	5.600
		Middle level management	5.467	4.800
		Senior Level Management	5.200	5.800
	FMCGSector	Entry level management	5.467	6.067
		Middle level management	5.267	5.867
		Senior Level Management	6.000	6.600
	PetroleumSector	Entry level management	6.967	6.500
		Middle level management	7.067	4.667
		Senior Level Management	7.800	4.800

CONCLUSION

The results of this study has important managerial insinuations with regard to various sectors in general and the four sectors in particular. These four sectors under study have major contribution in our economy. So, if the results of this study is taken into consideration and applied, it can steer the organizations to another level. In this research creativity of employees is studied and its relation to the various managerial levels, sectors and decision making style. And we are all aware of the fact that everything in the

organization can be imitated but the employees of the organization are the assets which is in replicable.

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APPENDIX

Figure 5.1: A 2 X 4 X 3 Factorial Design

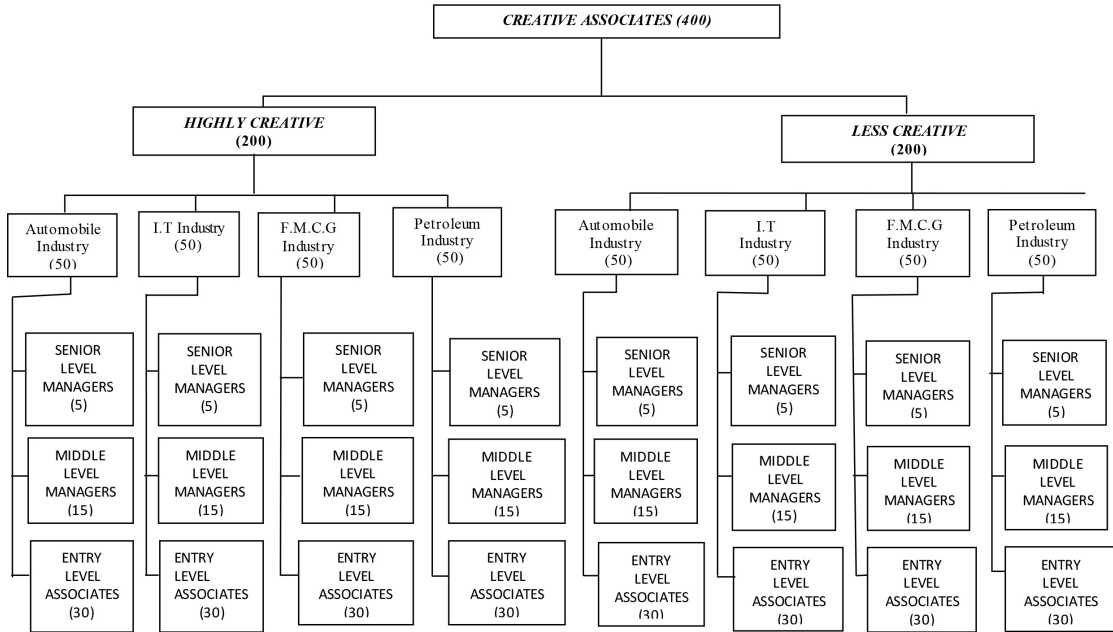


Figure 5.2: Sample Distribution

	ASSOCIATES							
	HIGHLY CREATIVE				LESS CREATIVE			
	200				200			
	Automobile Industry	I.T Industry	F.M.C.G Industry	Petroleum Industry	Automobiles Industry	I.T. Industry	F.M.C.G Industry	Petroleum Industry
Entry Level Manager	30	30	30	30	30	30	30	30
Middle Level Manager	15	15	15	15	15	15	15	15
Senior Level Managers	5	5	5	5	5	5	5	5
TOTAL	50	50	50	50	50	50	50	50

TOTAL: 400

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Article received on 24.09.17 | Article Accepted on 03.11.17