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A Study of Impact of Work Stress on Managerial Creativity with Reference to Indian Executives

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Abstract:

From the liberalisation of Indian Economy in 1991 to 2014, India Incorp. has travelled a long distance. Struggling in a competitive global market and combating the challenges of multiyear widespread recession, it has become clear that the only organizations which will be able to survive and then go on to win the competition will be the organizations which value and nurture the creativity in its human resources, commonly referred to as managerial creativity. But the million dollar question is what managerial creativity is? How does one identify creativity, can it be learnt or are people born with it? What are key drivers of creativity in an organization?

It is a well accepted fact that all the pressures on the individual working in the organization results in an all pervasive, omnipotent stress. Every employee goes through stress in their everyday working. Infact; Work stress has become synonymous with work itself. Traditional Indian company managers seem to be governed by the perception that employees give out their best under stressful situations, so much so that many believe that people will not give their best if they are made comfortable. Is this really true? What impact does work stress actually have on managerial creativity? An obvious issue is how does one manage to balance both being creative which is very crucial and at the same time combat the influence of stress at work. In order to harness the creativity in managers, organizations have to find out ways to manage work stress.

Keywords: Managerial Creativity, work stress, Indian company

1. Introduction

There are three ways of looking at stress- *medical, psychological and sociological*. While the first construes stress typically as a defensive bodily response to environmental demands and involves physiological components; the second places greater emphasis on the cognitive appraisal (mental picture) of threatening environmental conditions and the ensuing coping process. The third analyses stress as the resultant of stressful societal conditions. These three foci have produced a large body of research and practice, extremely active and variegated in terms of methodology, samples and conceptual analyses.

One comprehensive definition can thus be given as "Stress consists of any event in which environmental demands, internal demands, or both, tax or exceed the adaptive resources of the individual, social system or tissue system". (Farmer, Monahan and Hekeler, 1984) Gregory Moorhead and Ricky W. Griffin (1986) define stress as "a person's adaptive response to a stimulus that places excessive psychological and physical demands on him or her." Selye (1950) defined stress as 'the nonspecific response of the body to any demand'. He was convinced that no matter what the causes of stress, the reactions were identical. He was of the opinion that the stimulation – excess or insufficient – may lead to manifestations of stress and may be harmful to the body.

2. Indian tradition

Ancient Indian philosophical and religious texts provide considerable information on stress. They provide information not only on the causes of stress but also provide vital information on how those conditions can be successfully managed. There are at least two approaches to the teachings of stress management. In the first approach one begins with the nature of human existence and moves to its dysfunction. The second approach is to identify the problem and its resolution. At the base of all worries are desire and the associated ego involvements called Kleshas. There are five types of Kleshas – Avidhya (Ignorance), Asmita (Egoism), Raga

(Attraction), Dvesha (Repulsion), Abhinivesh (Lust for life). When one is caught under Klesh, Dukh (sorrow or suffering) arises, means Kleshas lead to Dukha.

These two concepts – Klesh and Dukh – are closer to the term stress and have been highlighted by most of our Indian indigenous systems, like Samkhya, Yoga, and Ayurveda. As per Yoga frame work Klesh refers to the stressor aspect while Dukh to the phenomenon of the stress response itself.

Though there is no special concept of stress in Indian tradition, yet much has been written on its causes and the ways to manage stress. Many of the methods like meditation, relaxation, exercises, yoga, role of diet in the management of stress and related diseases are in common parlance today.

3. Managerial Creativity:

The world is becoming more and more complex. Modern conveniences abound, and technology seems to have touched everything from cooking to mass production, from communication to driving. In some ways life today is easier than ever before. In other ways, it is more difficult. Although we may now use a cellular phone to keep track of family members and to synchronize our appointments, we must also master cell phone operation—and update the requisite skills each time we buy a new cell phone. We must also develop new skills to operate our televisions, ovens, automobiles, and computers. Perhaps it would be most accurate to say that we have more opportunities than ever before, but more demands are placed upon us as well.

As mentioned in *Management Development Review* more than ten years ago (MDR 1997), some multinational companies realized that one of their main assets are employees' imagination and ideas. They consider the aptitude to convert ideas into useful knowledge and useful knowledge into added value as a key resource. Thus, more important than allowing the flourishing of ideas and creativity, it is essential managers apply rigorous methodologies to idea management as they do for example with the finance domain of organizations (John Kao cited by MDR 1997). According to Nogueira and Marques (2008), organizations should adopt management models that consider organizational innovation processes based on professional qualifications, management skills and decision capacities. In fact, creativity management is no longer an option and it can be seen as a corporate asset (Kao 1997). Kao (1997) refers to creativity as a "process that can be observed, analyzed, understood and even replicated, taught and managed" and that "needs a particular environment in which to blossom and grow". Wayne (2008) suggests creativity might be defined as the process by which new ideas that make innovation possible is defined. As defined by Voldere (2006:16), creativity contributors to the scholarly literature on innovation typically distinguished between invention, an idea made manifest, and innovation, ideas applied successfully in practice new ideas, to benefit individuals, groups, organizations or wider society".

4. Review of Literature

4.1. Work Stress

- **Kahn et al ;(1964)** concluded that the two situational variables like role conflict and role ambiguity are the organizational stressors. They found a significant relationship between the organization size and reported job stress, while finding a relationship between formalization and bureaucratization in larger organizations. **Holmes and Rahe ;(1967)** studied list of forty-three life events as the Social Readjustment Rating Scale as a widely used single instrument in measuring the stress.
- **Benson;(1975)** clarified the relationship between the physiological and the psychological stresses humans often as a result of the biological "fight or flight response" in situations perceived to be threatening. He argued that hard wired biological programming in humans automatically produced life-preserving high adrenaline reactions in the presence of real or perceived dangers. **Srivastava and Singh ;(1981)** developed an occupational stress index. It assesses perceived occupational stress related to role overload, role ambiguity, role conflict, group and political pressures, responsibility for persons, under participation, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and unprofitability.

4.2. Women and Stress

Women feel more job stress than men. While men work longer hours, take less vacation time, and tend to have jobs with characteristics leading to more stress, women report having more demanding jobs. They are interrupted more frequently while working and have too many tasks to do at the same time.

DeCarlo and Gruenfeld (1989) found that approximately 40% of job turnover is a result of stress. The financial costs of stress cannot be ignored. Stress costs American organizations between \$200 billion to \$300 billion each year; this is more than the combined annual profits of all Fortune 500 companies (Dillon, 1999).

(Pestonjee, 1991) warns of five specific signals that the quality of your primary relationship, or your precious time with your kids, is being jeopardized by the pressures that accompany you home each night from work. These five signals are:

- If you are so tired from work that you don't feel like talking to your loved ones and your only response to "How was your day" tends to be "I don't want to talk about it."
- If you unintentionally sound or look like an impatient boss at home who says to your loved ones things like "Cut to the chase," "Get to the point," "Can't you see I'm busy right now," or "I've got too much on my mind--just let me be."
- If you feel irritated or unable to concentrate on your loved one's stories about the day, or your kids' questions, because you only want to numb out in front of the television, the computer, the videogames, or the snack food.

- If you notice that you're far more concerned about some office politics that got on your nerves recently, but you have little interest in your family's activities, their inner lives, or the developmental leaps and daily struggles your kids are having.
- If you discover that your mate would much rather talk to someone else (a therapist, a friend, or even a current flirtation) than to confide in you -- even though the two of you once prided yourselves on being terrific best friends and loyal confidantes.

4.3. Managerial Creativity

- **Wallas; (1926)** concluded that the process of creativity is typically depicted as consisting of the phases termed 'preparation', 'incubation', 'insight' and 'elaboration and evaluation'. The linear models of the innovation process show a higher variability in the terminology – depending on the definition of innovation and the focus of the argument to be made – but basically they all start with 'discovery' or 'idea', continue possibly with 'definition', 'research', 'development', and 'validation' and end with 'market launch' or 'diffusion' **Cooper; (1990)**.
- **Weisberg; (1999)**. According to social cognitive theory, individuals acquire knowledge and skills through "enactive mastery experience" (i.e., direct experience of attaining a task or skill) and "mastery modeling" (i.e., observational learning from proficient models such as leaders) **Bandura ;(1986, 1997)**. From the perspective of social cognitive theory **Bandura ;(1986, 1997)**, transformational leadership represents a critical *external factor* in employee learning. Transformational leaders, by engaging in *intellectual stimulation*, set the expectation for creativity and serve as creative role models for employees. Through the influence of behavioral modeling, transformational leaders enhance followers' ability to develop new ideas and question outmoded operating rules **Khandwalla; (2004)** reported that creativity training is quite effective. By early 1990's, over half of the five hundred largest Corporations had adopted some or the other form of creative thinking training for their staffs due to its effective results.

5. Work Stress and Creativity

- **Anderson and colleagues;(2004)** proposed a model of creativity and innovation in which some form of distress (at the individual, group, or organizational level) is viewed as triggering creativity and innovation in a cyclical manner; perhaps, when individuals, groups, and organizations experience some form of distress, it signals the need for change (and a concomitant reduction in predictability and control).When employees feel nurtured and encouraged to be creative, they will feel less tension and stress, will feel good about playing with ideas and be more likely to take risks **Amabile; (1996)**. **Talbot, Cooper & Barrow ;(1992)** examined the surprisingly neglected relationship between stress and creativity.
- **Smith et al. ;(1990)**, suggested that evaluation and pressure often lead directly to anxiety and divided attention, and that this undermines creative thinking because attention is directed to a stress or rather than to the task or problem at hand. Smith et al. acknowledged that there is probably a threshold, below which creative thinking is unaltered. **Simon ;(2001)** reported that eustress could be good for people thereby bringing about enhanced efficiency and creativity in the individual. **Jayabala;(2004)** reported that stress needs to be strategically dealt with when stress and fatigue are long term, then life style and organizational changes may be brought about to diffuse the stress and enhance creativity.
- **Byron, Kristin ;(2010)** concluded after their meta-analysis of 76 experimental studies (including 82 independent samples) aiming to clarify the association between stress and creativity and identify factors that may explain differences between studies. They found a curvilinear relationship between evaluative *stress* and *creativity* such that low evaluative contexts increased creative performance over control conditions, whereas highly evaluative contexts decreased creative performance. They found a linearly negative relationship between uncontrollability and *creativity* such that more uncontrollability decreased creative performance. Research has generally demonstrated that stressful or demanding work can cause negative consequences for individuals including work behaviors such as absenteeism; performance and turnover (see War, 1999).**Larch, House, and French ;(1980)** found that supervisor/co-worker's support was more helpful in coping with job-related stress than support from family/friends.
- **Teresa M.Amabile, Constance N. Hadley, and Steven J. Kramer;(2002)**,concluded that when creativity is under the gun, it usually ends up getting killed In short, the key to protecting creative activity-including your own - is to offset the effects of extreme time pressure. The obvious way to do that is to reduce the time pressure. But in cases where it is unavoidable, its negative effects can be softened somewhat by getting your people and yourself in the mind-set of being on a mission – sharing a sense that the work is vital and the urgency legitimate. It also means ruthlessly guarding protected blocks of the workweek, shielding staff from the distractions and interruptions that is the normal condition of organizational life.
- **Linn Van Dyne, Karen A. Jehn and Anne Cummings ;(2002)** predicted that work strain will result in lower creativity. According to **Farr and Ford ;(1990)**, strain produced routinized, well rehearsed behavior patterns and generally interferes with novel or creative responses. Research on attention conflict **Baron ;(1986)** suggested that distraction is particularly problematic for complex task performance **Sanders and Baron ;(1975)**. Similarly, **Jex;(1998)** posited that stress and strain are especially damaging to the motivational aspects of performance, such as demonstrating effort or going beyond routine job responsibilities. When employees experience strain, they may neglect the more challenging or intangible aspects of the job. When employees are distracted by other goals (such as coping with strain or reducing strain), they resort to habitual actions and forsake creative actions **Ford; (1996)**. **Judith A. Ross ;(2009)**, commented that stress, far from enhancing performance, sometimes undermines it. When our stress level is too high or the stress has lasted too long, we can't concentrate. Creativity fizzles out and frustration sets in. We become distracted, forgetful, and irritable.

6. Research Methodology

6.1. Objectives of the Study

- To understand managerial creativity in organizations.
- To study the impact of work stress on managerial creativity.

6.1.1. The Study

The present study is an exploratory investigation to examine the effect of work stress as independent variable on managerial creativity as dependent variable.

The variables have two levels:

Work Stress	: High
	: Low
Managerial creativity	: High
	: Low

6.1.2. The Sample

The initial sample was of 500 subjects. The incomplete sets of measures were screened out, and completed ones were classified into discrete groups as shown in the research design. The present research was conducted on a sample of 437 executives from different industries such as Telecom, Insurance, Banking, Hospitality, IT & ITES, Manufacturing, Media etc. The respondents were selected on a systematic random sampling basis. The executives represented the three layers of hierarchy as junior level managers, middle level managers and senior level managers as follows:

132-Senior Managers

163-Middle Managers

142-Junior Managers

6.2. The Design

The design undertaken to understand the effect of independent variables on the dependent variable is a '2×2' bivariate factorial constitution.

		Managerial Creativity	
		Good	Bad
Work Stress	High	109	110
	Low	109	109
		437	

6.3. Hypothesis

- H₀₁ Managerial Hierarchy level does not affect managerial creativity.
- H₀₂ Qualification does not affect managerial creativity.
- H₀₃ Age does not affect managerial creativity.
- H₀₄ Gender does not affect managerial creativity.
- H₀₅ Hierarchy and qualification do not interact to affect managerial creativity.
- H₀₆ Hierarchy and age do not interact to affect managerial creativity.
- H₀₇ Hierarchy, qualification and age do not interact to affect managerial creativity.
- H₀₈ Hierarchy, qualification and gender do not interact to affect managerial creativity.
- H₀₉ Qualification and age not interact to affect managerial creativity.
- H₁₀ Hierarchy and gender do not interact to affect managerial creativity.
- H₁₁ Age and gender do not interact to affect managerial creativity.
- H₁₂ Qualification and gender do not interact to affect managerial creativity.
- H₁₃ Hierarchy, age and gender do not interact to affect managerial creativity.
- H₁₄ Qualification, age and gender do not interact to affect managerial creativity.
- H₁₅ Hierarchy, qualification, age and gender do not interact to affect managerial creativity.
- H₁₆ Work stress does not affect managerial creativity.

6.4. For Data Collection

Standardized tools were administered on each subject of the sample. Work Stress was measured by 'work Stress' standardized scale by Shaliendra Singh; it has high reliability & validity. Managerial Creativity Scale authored by Sangeeta Jain, Rajnish Jain and Upinder Dhar was administered. The scale has Reliability Split Half=0.826 & Validity 0.909.

		Value Label	N
LEVEL	1	Top	132
	2	middle	163
	3	lower	142
QUAL	1	Hsc	122
	2	Gr	175
	3	Pg	140
AGE	1	less than 30	343
	2	30 or more	94
GENDER	1	M	342
	2	F	95

Table: 4.1

The median value of Work Stress is 3. Median value of Quality of Work Life is 3.4154. As depicted in table no.4.1, qualifications are categorized into three levels higher secondary and lower, Graduates, post graduates and above. Hierarchical levels are categorized into three levels, top, middle and lower managerial cadres. Age has been classified into two groups, less than 30 years and 30 years or more. Gender has been grouped into two, males and females.

LEVEL	QUAL	AGE	GENDER	Mean	Std. Deviation	N
Top	Hsc.	less than 30	M	3.1067	0.635	45
			F	3.1886	0.69	7
			Total	3.1177	0.6361	52
		30 or more	M	3.1093	0.6893	30
			F	3.24	1.8102	2
			Total	3.1175	0.7424	32
		Total	M	3.1077	0.6526	75
			F	3.2	0.8759	9
			Total	3.1176	0.6742	84
	G	less than 30	M	3.83	0.2777	8
			F	4.22	0.5374	2
			Total	3.908	0.3452	10
		30 or more	M	3.79	0.3022	8
			F	3.96	0.5091	2
			Total	3.824	0.324	10
		Total	M	3.81	0.2811	16
			F	4.09	0.453	4
			Total	3.866	0.3286	20

	Pg	less than 30	M	2.6275	0.3097	16
			F	2.47	0.3088	4
			Total	2.596	0.3082	20
		30 or more	M	2.375	0.267	8
			Total	2.375	0.267	8
		Total	M	2.5433	0.3147	24
			F	2.47	0.3088	4
			Total	2.5329	0.3093	28
	Total	less than 30	M	3.0794	0.6363	69
			F	3.1262	0.7945	13
			Total	3.0868	0.6585	82
		30 or more	M	3.1	0.7139	46

*Table 4.2: Descriptive Statistics
Dependent Variable: Managerial Creativity*

LEVEL	QUAL	AGE	GENDER	Mean	Std. Deviation	N
			F	3.6	1.1625	4
			Total	3.14	0.7547	50
		Total	M	3.0877	0.6654	115
			F	3.2376	0.8773	17
			Total	3.107	0.6941	132
	Hs	less than 30	M	3.33	0.22	4
			F	3.4	0.3651	4
			Total	3.365	0.2816	8
		30 or more	M	3.12	0.2078	3
			M	3.12	0.2078	3
		Total	M	3.24	0.2263	7
			F	3.4	0.3651	4
			Total	3.2982	0.2779	11
	G	less than 30	M	3.5409	0.4067	88
			F	3.2347	0.5424	30
			Total	3.4631	0.4624	118
		30 or more	M	3.5675	0.4014	16
			F	3.08	0.2623	3
			Total	3.4905	0.4186	19
		Total	M	3.545	0.404	104
			F	3.2206	0.5224	33
			Total	3.4669	0.4552	137
	Pg	less than 30	M	3.4171	0.5595	7
			F	3.0629	0.2731	7

			Total	3.24	0.4612	14
		30 or more	M	3.2	.	1
			Total	3.2	.	1
		Total	M	3.39	0.5236	8
			F	3.0629	0.2731	7
			Total	3.2373	0.4445	15

Table 4.2: Descriptive Statistics
Dependent Variable: Managerial Creativity

LEVEL	QUAL	AGE	GENDER	Mean	Std. Deviation	N
	Total	less than 30	M	3.5236	0.4124	99
			F	3.2215	0.4921	41
			Total	3.4351	0.4568	140
		30 or more	M	3.482	0.4035	20
			F	3.08	0.2623	3
			Total	3.4296	0.4074	23
		Total	M	3.5166	0.4095	119
			F	3.2118	0.4793	44
			Total	3.4344	0.449	163
			F	2.312	0.2733	5
			Total	2.3878	0.3339	23
			F	2.38	8.49E-02	2
			Total	2.37	0.1102	4
		Total	M	2.404	0.3364	20
			F	2.3314	0.2283	7
			Total	2.3852	0.3095	27
	G	less than 30	M	2.5567	0.3584	12
			F	2.12	0.1131	2
			Total	2.4943	0.3671	14
		30 or more	M	2.78	2.83E-02	2
			F	2.86	2.83E-02	2
			Total	2.82	5.16E-02	4
		Total	M	2.5886	0.3396	14
			F	2.49	0.4325	4
			Total	2.5667	0.3507	18
	Pg	less than 30	M	2.9394	0.5982	64
			F	2.924	0.689	20
			Total	2.9357	0.6167	84

Table 4.2: Descriptive Statistics
Dependent Variable: Managerial Creativity

LEVEL	QUAL	AGE	GENDER	Mean	Std. Deviation	N
		30 or more	M	3.088	0.7622	10
			F	3.0667	0.1155	3
			Total	3.0831	0.6618	13
		Total	M	2.9595	0.619	74
			F	2.9426	0.6432	23
			Total	2.9555	0.6214	97
	Total	less than 30	M	2.7889	0.5752	94
			F	2.7511	0.6706	27
			Total	2.7805	0.5951	121
		30 or more	M	2.94	0.6906	14
			F	2.8114	0.3181	7
			Total	2.8971	0.5867	21
		Total	M	2.8085	0.59	108
			F	2.7635	0.611	34
			Total	2.7977	0.5932	142
	Hs	less than 30	M	2.9325	0.6388	67
			F	2.9675	0.673	16
			Total	2.9393	0.6415	83
		30 or more	M	3.0674	0.6632	35
			F	2.81	1.1581	4
			Total	3.041	0.7111	39
		Total	M	2.9788	0.6472	102
			F	2.936	0.7573	20
			Total	2.9718	0.6633	122
	G	less than 30	M	3.453	0.5097	108
			F	3.2271	0.6338	34
			Total	3.3989	0.5482	142
		30 or more	M	3.5754	0.4332	26
			F	3.2686	0.5469	7

Table 4.2: Descriptive Statistics
Dependent Variable: Managerial Creativity

LEVEL	QUAL	AGE	GENDER	Mean	Std. Deviation	N
			Total	3.5103	0.4679	33
		Total	M	3.4767	0.4966	134
			F	3.2341	0.6136	41
			Total	3.4199	0.5345	175
	Pg	less than 30	M	2.9205	0.5806	87
			F	2.8968	0.5969	31
			Total	2.9142	0.5824	118
		30 or more	M	2.7937	0.6733	19
			F	3.0667	0.1155	3
			Total	2.8309	0.6317	22
		Total	M	2.8977	0.5968	106
			F	2.9118	0.572	34
			Total	2.9011	0.5889	140
	Total	less than 30	M	3.1431	0.6232	262
			F	3.0494	0.6388	81
			Total	3.1209	0.6273	343
		30 or more	M	3.1675	0.6669	80
			F	3.0943	0.7007	14
			Total	3.1566	0.6687	94
		Total	M	3.1488	0.6328	342
			F	3.056	0.6445	95
			Total	3.1286	0.6358	437

Table 4.2: Descriptive Statistics
Dependent Variable: Managerial Creativity

Source	Type III Sum of squares	Df	Mean square	F	Sig.
LEVEL	8.244	2	4.122	15.038	0
QUAL.	4.176	2	2.088	7.618	0.001
AGE	2.228E-02	1	2.228E-02	0.081	0.776
GENDER	0.221	1	0.221	0.805	0.37

Table 4.3: Tests of Between-Subjects Effects
Dependent Variable: Managerial Creativity

H₀₁ Managerial Hierarchy level does not affect managerial creativity.

F= 15.038

The null hypothesis is *rejected*.

It implies that managerial hierarchy has a significant affect on managerial creativity. From table 4.2 it is clear that the managerial creativity is highest in the lower managerial levels, not much difference was found between the top and middle level managerial creativity. The overall managerial creativity of both top and middle levels was found to be slightly less than the lower levels.

H₀₂ Qualification does not affect managerial creativity.

F=7.618

The null hypothesis is *rejected*.

It implies that qualification has a significant affect on managerial creativity .From table 4.2 it is clear that qualification has a significant impact on managerial creativity; managerial creativity is higher for higher qualification.i.e.in the category of post graduates and above.

H_{03} Age does not affect managerial creativity.

$F=.081$

The null hypothesis is accepted.

It implies that age does not have any significant affect on managerial creativity, no significant difference was observed between managerial creativity of employees of different ages.

H_{04} Gender does not affect managerial creativity.

$F=.805$

The null hypothesis is accepted.

It implies that there is no significant difference observed between the managerial creativity manifested by males and females.

Source	Type III Sum of squares	df	Mean square	F	Sig.
LEVEL×QUAL.	15.358	4	3.84	14.008	0
LEVEL×AGE	0.799	2	0.399	1.458	0.234
LEVEL×QUAL.×AGE	0.583	4	0.146	0.532	0.712
LEVEL.×QUAL.×GENDER	0.746	4	0.186	0.68	0.606

Table 4.4: Tests of Between-Subjects Effects
Dependent Variable: Managerial Creativity

H_{05} Hierarchy and qualification do not interact to affect managerial creativity.

$F=14.008$

The null hypothesis is *rejected*.

It shows that hierarchy and qualification interact to affect managerial creativity.

H_{06} Hierarchy and age do not interact to affect managerial creativity.

$F=1.458$

The null hypothesis is *accepted*.

It shows that Hierarchy and age do not interact to significantly affect managerial creativity.

H_{07} Hierarchy, qualification and age do not interact to affect managerial creativity.

$F=.532$

The null hypothesis is *accepted*.

It implies that hierarchy, qualification and age do not interact to significantly affect managerial creativity.

H_{08} Hierarchy, qualification and gender do not interact to affect managerial creativity.

$F=.680$

The null hypothesis is *accepted*.

It implies that hierarchy, qualification and gender do not interact to significantly affect managerial creativity.

Source	Type III Sum of squares	df	Mean square	F	Sig.
QUAL.×AGE	0.282	2	0.141	0.514	0.599
LEVEL×GENDER	0.62	2	0.31	1.131	0.324
AGE×GENDER	3.18E-03	1	3.18E-03	0.012	0.914
QUAL.×GENDER	0.18	2	9.01E-02	0.329	0.72

Table 4.5: Tests of Between-Subjects Effects
Dependent Variable: Managerial Creativity

H₀₉ Qualification and age do not interact to affect managerial creativity

F=.514

The null hypothesis is *accepted*.

It implies that qualification and age do not interact to significantly affect managerial creativity.

H₁₀ Hierarchy and gender do not interact to affect managerial creativity.

F=1.131

The null hypothesis is *accepted*.

It implies that hierarchy and gender do not interact to significantly affect managerial creativity.

H₁₁ Age and gender do not interact to affect managerial creativity.

F=.012

The null hypothesis is *accepted*.

It shows that age and gender do not interact to significantly affect managerial creativity.

H₁₂ Qualification and gender do not interact to affect managerial creativity.

F=.329

The null hypothesis is *accepted*.

It implies that qualification and gender do not interact to significantly affect managerial creativity.

Source	Type III Sum of squares	df	Mean square	F	Sig.
LEVEL×AGE×GENDER	0.215	2	0.107	0.392	0.676
QUAL.×AGE×GENDER	8.777E-02	2	4.389E-02	0.160	0.852
LEVEL.×QUAL.×AGE×GENDER	9.336E-02	1	9.336E-02	0.341	0.560

Table 4.6: Tests of Between-Subjects Effects
Dependent Variable: Managerial Creativity

H₁₃ Hierarchy, age and gender do not interact to affect managerial creativity.

F=.392

The null hypothesis is *accepted*.

It shows that hierarchy, age and gender do not interact to significantly affect managerial creativity.

H₁₄ Qualification, age and gender do not interact to affect managerial creativity.

F=.160

The null hypothesis is *accepted*.

It implies that qualification, age and gender do not interact to significantly affect managerial creativity.

H₁₅ Hierarchy, qualification, age and gender do not interact to affect managerial creativity.

F=.341

The null hypothesis is *accepted*.

It implies that hierarchy, qualification, age and gender do not interact to significantly affect managerial creativity.

Source	Type III Sum of squares	df	Mean square	F	Sig.
STRESS	10.862	35	0.310	20.862	0.00

Table 4.7: Tests of Between-Subjects Effects
Dependent Variable: Managerial Creativity

H₁₆ Work stress does not affect managerial creativity.

F=20.862

The null hypothesis is *rejected*.

It implies that work stress has a significant effect on managerial creativity. It is clear from the table that higher the work stress, lower is the managerial creativity.

7. Conclusion

Hierarchical levels are not very relevant in terms of affecting managerial creativity. But hierarchy and qualification together interact to have positive effect on Managerial creativity. Managerial creativity is higher for higher qualification.i.e.in the category of post graduates and above. It implies that it does pay to be well educated. Education gives more exposure more insight and as a result more enriched experience will lead to enhanced creativity.

No significant difference was observed between managerial creativity of employees of different ages and gender. All perceptions regarding age and gender hierarchy, qualification, age and gender stand to be trashed.

It shows that Hierarchy and age; hierarchy, qualification and age; hierarchy, qualification and gender; qualification and age; hierarchy and gender; age and gender; qualification and gender; hierarchy, age and gender; qualification, age and gender; hierarchy, qualification, age and gender; do not interact to significantly affect managerial creativity.

It implies that work stress has a significant effect on managerial creativity. The research proves that higher the work stress, lower is the managerial creativity.

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