Stress at the Workplace- An Empirical Study in Mumbai

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Abstract:

Everyone experiences stress on a daily basis. Stress is any physical, chemical or emotional situation that causes tension or strain and that requires our body or mind to compensate in order to maintain internal balance and harmony. People experience positive stress when they are excited about something important or interesting that happens in their lives. The positive experience prompts them to take action. On the other hand people experience negative stress when a sudden or disagreeable event or disaster occurs. Disasters can cause anxiety and traumatic stress. What is commonly referred to as 'organizational stress' may be said to be caused by a dysfunctional culture. There is a considerable cost to the health of employee as they are working in a stressful environment in the company. It is in the interest of the company to hence create healthy work environment.

This paper makes an attempt to provide some evidence that suggests the stress of the employees in different job profiles and its factor analysis.

Therefore, it is important to get into the insights of work culture and humans undergoing stress. This paper highlights the factors that are responsible to create anxiety and stress in humans. It also suggests some prevention parameters for the same. Goal of this paper is not to eliminate stress but to learn how to manage it tactfully.

Keywords: Anxiety, Stress, work culture, job profile, anxiety.

1. Introduction

Stress is a part of day to day living. Most of us experience stress at one time or another. Anybody and everybody can get stressed. Not only human beings but even animals get stressed. When they have to wander from place to place in search of food and water, when they have to carry heavy weight on their back (in case of donkeys, bullock carts and horses) animals also get stressed at that time. A child who has just started talking gets stressed when he is asked to repeat in front of everyone the words that he has learnt to speak and perform various actions that he has learnt. As exams draw near, we know that the anxiety level of children rises. But what we may not know is that some parents too tend to get overtly anxious and convey this to the child, who gets further stressed as a result. He has to perform well to satisfy himself as well as for his parents. The competitive spirit of the parents leads them to force the child to perform more than he may be able to. Many a times, we see that such children perform poorly in their academics.

As college students, many of us experience stress trying to meet our academic demands, adjusting to a new living environment, or developing friendships. Employees get stressed when they are not satisfied with their jobs or working environment, feel unsecured about their jobs or are having some family problems and so on. Managers get stressed when they are not able to exploit the potential of their employees to the fullest and many other reasons.

With heavy competition among employees and companies, stress at the workplace is a common phenomenon of today's modern corporate life. The quality of work has undergone a complete change over the past few years. Stress has become part and parcel of all

professionals. With every change comes stress. Job stress poses a threat to psychological as well as physical health. Work related stress in the corporate life of organized workers, ultimately, affects the work and health of the corporate. This is also known as 'organizational stress' which is caused by the changing mixed modern culture. Stress has an implied cost to people, in both financial and human terms, if they work in a stressful environment. It is therefore for the benefit of the company to create healthy workplaces.

People have their own methods of stress management. Understanding the mastery of controlling stress can help one to prevent the counter effects of this urban malaise. As a positive influence, stress can help compel us to take action; it can result in a new awareness and an exciting new point of view. On the other hand, it can result in negative feelings which can lead to various health problems.

2. Literature Review

Research suggests that stress can enhance corporate performance. Instead of giving into stress, one can use it as a thrust to achieve success. Stress can stimulate one's energy to discover one's true potential. According to Dipboye *et al*, stress is any situation that requires an extra physical and/or psychological demands on a individual which requires a different response.

As analyzed in 1985 by Fisher, in 1989 by Sauter *et al*, employees in today's highly competitive jobs face new and uncertain challenges every day, and a lot of the stress occurs as a result of lack of control over every day-to-day situations.

As discussed by Glowinkowski & Cooper in 1986, work at the manager level is highly stressful as compared to others lower the hierarchy. For these managers the job-related stress is caused by excess workload, at the workplace.

3. Objectives Of The Study

There is a rapid growth of organizations and its extensive use in business and industry which has increased the competition phenomenally among organizations across the globe, and the employee of today is facing more challenges as compared to their predecessors. These compelling forces in the organization are continuously reshaping the business strategies, restructuring the hierarchy, re-engineering business processes, and altering managerial practices, thereby, forcing the organizational to adapt innovative business models.

(1)Objective (1): To identify and group the key organizational factors causing stress in various respondents using factor analysis.

(2)Objective (2): To compare the effect of Age on Overall stress in various age group conditions.

(3)Objective (3): To compare sample mean of different stress factors with its population mean.

4. Research Instrument

The instrument intended to measure the respondent's attitude towards stress. This tool consisted of 21 items which are based on workplace stress. The design of the questionnaire was based on the principle of analyzing stress on the individual. The questionnaire used comprises demographic questions and statements in a Likert's 4 point scale where 1 = "always", 2 = "often", 3 = "sometimes", 4 = "never" which was used for analyzing the factors employees causing stress in the work environment.

5. Methodology

5.1 Participants

The data was collected from respondents on a random and convenience basis by the researchers in Mumbai only over the last 12 months. The primary data are collected using the

random survey method. Totally 60 Questionnaires were distributed and 56 collected out of which 50 completed questionnaires were found usable.

5.2 Demographic Analysis

Out of 50 respondents, 48% were male and 52% were female. 4% earned under Rs 10,000 per month, 38% between Rs.10000 and Rs. 20000 p.m., and 58% earned between Rs.20000 and Rs. 40000. 16% were between the ages of 18-25, 38% were between the ages of 26-35, 28% were between the ages of 36-45, 12% were between the ages of 46-55, 6% were 51+.

6. Findings And Discussion

Objective (1): To identify and group the key organizational factors causing stress in various respondents using factor analysis.

6.1 Reliability Test

The evaluation of questionnaire reliability- internal consistency is possible by Cronbach's α (Cronbach, 1984), which is considered to be the most important reliability index and is based on the number of the variables/items of the questionnaire, as well as on the correlations between the variables (Nunnally, 1978). The reliability of the instrument means that its results are characterized by repeativeness (Psarou and Zafiropoulos, 2004) and these results are not connected with measurement errors (Zafiropoulos, 2005), was evaluated by Cronbach alpha coefficient. The index alpha (a) is the most important index of internal consistency and is attributed as the mean of correlations of all the variables, and it does not depend on their arrangement (Anastasiadou, 2006).

In accessing the data from the twenty one variables summed to determine the stress factors scores formed a reliable scales. Thus, the reliability test using the Cronbach Alpha values was conducted prior to further analysis.

The following table of Reliability Statistics (Table 1) inform us about the value of the coefficient a of Cronbach for the research scale is 0.908=90,8%. This gets over the percent of 80%, which is an extra good value for the internal consequence of the conceptual construction of the investigated scale (Anastasiadou, 2010; Nouris, 2006). If we continue with the release of units, in other words with the standardized value of the variables, then the coefficient Cronbach a will slightly increase the value of α=0.909. This means that whether we increase the number of the items, then Cronbach a will take the value of 0.909

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.909	21

6.2 Results of Internal Consistency

Principal Component Analysis with Varimax Rotation and Kaiser Normalization was conducted to assess the underlying structures for the 21 items of workplace stress. Then, a Principal components analysis with Varimax Rotation produces the dimension of differentiation was used in order to confirm or not the scale construct validity.

The factor structure of the respondents job-related stressors obtained with the job stressor 21 scale was identified using exploratory factor analysis (EFA). In the process of conducting the EFA, the Kaiser-Meyer-Olkin (KMO) (Kaiser-Meyer Olkin Measure of Sampling Adequacy,

KMO) (Kaiser, 1974), which examines sample sufficiency. It measure of sampling adequacy and Bartlett's test of sphericity (X^2) were confirmed. The maximum likelihood method was used for factor extraction; varimax rotation was also conducted.

The main method of extracting factors is the analysis on main components with right-angled rotation of varimax type (Right-angled Rotation of Maximum Fluctuation), so that the variance between variable loads be maximized, on a specific factor, having as a final result little loads become less and big loads become bigger, and finally, those with in between values are minimized (Hair et al., 2005). This means that the factors (components) that were extracted are linearly irrelevant (Anastasiadou, 2006). The criterion of eigenvalue or characteristic root (Eigenvalue) ≥1 was used for defining the number of the factors that were kept (Kaiser, 1960, Sharma, 1996, Hair et al., 1995). Model acceptance was based on two criteria: a) each variable, in order to be included in the variable cluster of a factor, must load to it more than 0.5 and b) less than 0.4 to the rest of the factors) (Schene, et al., 1998).

Moreover, each factor must have more than two variables. In addition, it was considered, on the basis of common variable Communalities, that the variables with high. Communality imply great contribution to the factorial model (Hair et al., 2005). For the statistical data elaboration and check of the questionnaire factorial structure the software S.P.S.S., edition 16 was used.

The table Scale Statistics (Table 2) gives the scores that are related to the scale's entirety, which presents a mean of the class of 50.40 and a standard deviation of 5.095.

Table 2:Scale Statistics

Mean	Variance	Std. Deviation	N of Items
50.40	25.959	5.095	21

6.3 Factor Analysis & Sample Sufficiency Test & Sphericity Test

H_0: The factor analysis is not valid.

H_1: The factor analysis is valid.

The first is the Bartlet Test of Sphericity, in which it is examined if the subscales of the scale are inter-independent. The following table 3 (Table 3) gives information about two hypotheses of factor analysis. The use of factorial analysis in the analysis of respondents having stress was justified by the results of two tests: the tests of sphericity of Bartlett (KMO) and the scree-test of Cattel. From the following table, we find out that sample sufficiency index KMO by Kaiser-Meyer-Olkin, which compares the sizes of the observed correlation coefficients to the sizes of the partial correlation coefficients for the sum of analysis variables is 77.2%, and it is reliable because it overcomes 70% by far. In addition, supposition test of sphericity by the Bartlett test (Ho: All correlation coefficients are not quite far from zero) is rejected on a level of statistical significance $p<0.0005$ for Approx. ChiSquare obtained from this test is sufficiently high (456.644) and thus significant. Consequently, the coefficients are not all zero, so that the second acceptance of factor analysis is satisfied. As a result, both acceptances for the conduct of factor analysis are satisfied and we can proceed to it, and ACCEPT H_1: The factor analysis is valid.

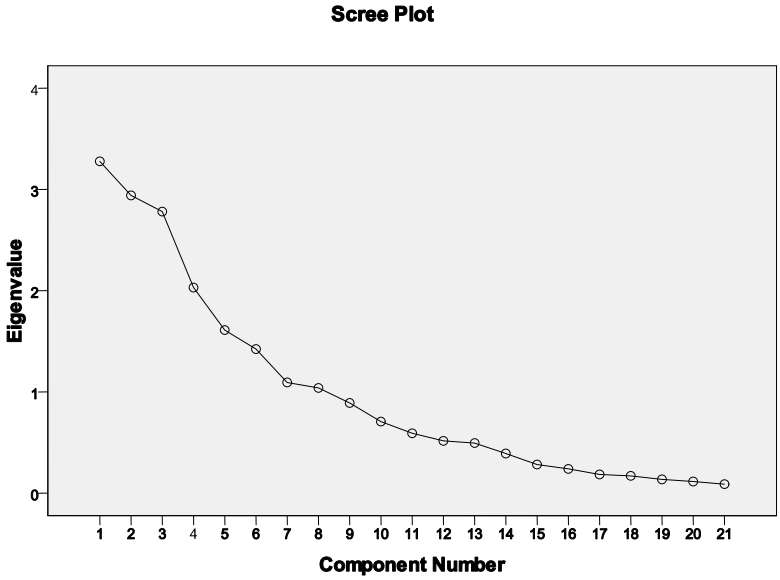
Table 3: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.772
Bartlett's Test of Sphericity	Approx. Chi-Square	456.644
	df	210
	Sig.	.000

6.4 The Scree Plot Graph

The scree plot graphs (Table 4) the eigen value against the factor number. You can see these values in the first two columns of the table immediately above. From the eight factor on, you can see that the line is almost flat, meaning the each successive factor is accounting for smaller and smaller amounts of the total variance.

For the scree-test of Cattel, insofar as the starting point of the analysis is the matrix of correlations, the common rule (of Kaiser) is to retain the factors corresponding to eigen values higher than a unit. Thus, eight factorial axes that were selected explain 77.126% of the original variance, determined at the point of inflection of the curve of Cattel's scree-test.

Table 4



The above graph (Table 4) presents a distinguished break up to the eighth factor, whereas after the eighth factor an almost linear part of the eigenvalue curve follows. Thus, we can take under consideration the eigenvalues, which are over 1 for all the eight factors (Table 5), and decide whether they interpret data in a satisfactory way.

Table 5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.277	15.606	15.606	3.277	15.606	15.606	2.681	12.766	12.766
2	2.941	14.006	29.612	2.941	14.006	29.612	2.431	11.575	24.341
3	2.782	13.246	42.858	2.782	13.246	42.858	2.203	10.492	34.833
4	2.031	9.670	52.527	2.031	9.670	52.527	2.167	10.319	45.152
5	1.611	7.669	60.196	1.611	7.669	60.196	2.063	9.826	54.978
6	1.423	6.776	66.973	1.423	6.776	66.973	1.849	8.806	63.784
7	1.093	5.205	72.178	1.093	5.205	72.178	1.537	7.317	71.101
8	1.039	4.948	77.126	1.039	4.948	77.126	1.265	6.025	77.126
9	.891	4.241	81.367						
10	.706	3.362	84.729						
11	.591	2.815	87.544						
12	.516	2.457	90.002						
13	.494	2.355	92.356						
14	.391	1.864	94.220						
15	.282	1.344	95.564						
16	.239	1.139	96.703						
17	.184	.876	97.579						
18	.170	.810	98.388						
19	.136	.646	99.034						
20	.115	.546	99.580						
21	.088	.420	100.000						

Extraction Method: Principal Component Analysis.

From Table 6, it is inferred that factor one is named Relaxing time. The Second factor is named Cordial relationships versus consequences. The third factor is named Reaction The fourth factor is named Treatment. The fifth factor is named Career Advancement. The Sixth factor is named Organise self. The Seventh factor is named Satisfaction. The eight factor is named Result of work pressure. Hence it can be concluded that inter personal relationships that cause stress is the result of the lack of the above eight factors.

Table 6

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
	Relaxing time	Cordial relationships versus consequences	Reaction	Treatment	Career Advancement	Organise self	Satisfaction	Result of work pressure
VAR00003	-0.526							
VAR00007	0.653							
VAR00015	-0.718							
VAR00019	0.848							
VAR00020	0.660							
VAR00001		-0.804						
VAR00018		0.719						
VAR00021		0.839						
VAR00005			0.766					
VAR00008			0.887					
VAR00010				0.922				
VAR00011				0.930				
VAR00009					0.506			
VAR00012					0.798			
VAR00016					0.786			
VAR00002						0.813		
VAR00013						0.855		
VAR00004							0.719	
VAR00006							-0.655	
VAR00014								-0.737
VAR00017								0.526

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

6.5 Compare the Means

Objective (2): To compare the effect of Age on Overall stress in various age group conditions.

"A one-way between subjects ANOVA was conducted to compare the effect of (IV) age on (DV) Overall stress in various age group conditions."

In this Descriptive Statistics box (table 7), the mean for the age group 18-25 is 2.4048, the mean for the age group 26-35 is 2.4160 , the mean for the age group 36-45 is 2.3299, the mean for the age group 46-55 is 2.5397, the mean for the age group 55 & Above is 2.3333.

The standard deviation for the age group 18-25 is .19048, the standard deviation for the age group 26-35 is .24786, the standard deviation for the age group 36-45 is .27225, the standard deviation for the age group 46-55 is .24590, the standard deviation for the age group 55 & Above is .16496.

The total number of participants (N) is 50.

Table 7: Descriptives

Overall Stress

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-25	8	2.4048	.19048	.06734	2.2455	2.5640	2.14	2.71
26-35	19	2.4160	.24786	.05686	2.2966	2.5355	2.05	2.90
36-45	14	2.3299	.27225	.07276	2.1727	2.4871	1.90	2.81
46-55	6	2.5397	.24590	.10039	2.2816	2.7977	2.24	2.81
55 & Above	3	2.3333	.16496	.09524	1.9236	2.7431	2.24	2.52
Total	50	2.4000	.24262	.03431	2.3310	2.4690	1.90	2.90

6.6 Anova

We use ANOVA to determine if the means are statistically different.

These five groups are the levels of factor age- there are five levels here. With this design we shall have multiple observations in the form of scores on Occupational Stress from a number of employees belonging to the five levels if factor age. We are interested to know whether all the levels, i.e. age groups have equal stress on the average. Non-significance of the test statistic (F-statistic) associated with this technique would imply that age has no effect on stress experiences by employees in their respective occupations. On the other hand, significance would imply that stress afflicts different age groups differently.

Null Hypothesis: All the age groups have equal stress levels on the average, where μ_1, μ_2, μ_3, μ_4, μ_5 are mean stress scores for the five age groups.

$$\mu_{18\text{-}25} = \mu_{26\text{-}35} = \mu_{36\text{-}45} = \mu_{46\text{-}55} = \mu_{55\ \&\ \text{Above}}$$

Alternate Hypothesis: The mean stress of at least one age group is significantly different.

SIG Value

This value will help you determine if your condition means were relatively the same or if they were significantly different from one another. Put differently, this value will help you determine if your age group had an effect on stress.

One can conclude that there is a statistically significant difference between your five conditions. One can conclude that the differences between condition Means are not likely due to change and are probably due to the age manipulation.

The table 8 that shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means.

We can see that the significance value is 0.497 (i.e., p = .497), which is more than 0.05. Because of this, we can conclude that there is no statistically significant difference between the mean of the five different age groups. Hence, there is no statistical significant difference between groups as determined by one-way ANOVA F(4,45) = .857 , p = .497, p> .05).

Since the exact significance level (.497) provided in SPSS output, is greater than alpha (.05) the results are not statistically significant.

If H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$ were true, probability would equal 0.497 of getting F test statistic value of .857 or larger. This is not much evidence against the null. It is plausible that the population means are identical.

Hence, ACCEPT Null Hypothesis: All the age groups have equal stress levels on the average, where $\mu_1, \mu_2, \mu_3, \mu_4, \mu_5$ are mean stress scores for the five age groups.(not significantly different)

$$\mu_{18\text{-}25} = \mu_{26\text{-}35} = \mu_{36\text{-}45} = \mu_{46\text{-}55} = \mu_{55 \text{ \& Above}}$$

REJECT Alternate Hypothesis: The mean stress of at least one age group is significantly different.(is significantly different)

One can conclude that the differences between condition Means are likely due to chance and not likely due to the IV manipulation.

Table 8: ANOVA

Overall Stress

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.204	4	.051	.857	.497
Within Groups	2.680	45	.060		
Total	2.884	49			

6.7 Means Plot

Although one-way ANOVA is not significant, still a look at the means plot will give us a slight idea of the difference in stress levels among the various age groups.

Statements are in a Likert's 4 point scale where 1 = "always", 2 = "often", 3 = "sometimes", 4 = "never" which was used for analyzing the factors employees causing stress in the work environment. The Mean plot on Table 9 shows that the maximum stress is between the age groups of 36-45, followed by 55 and above.

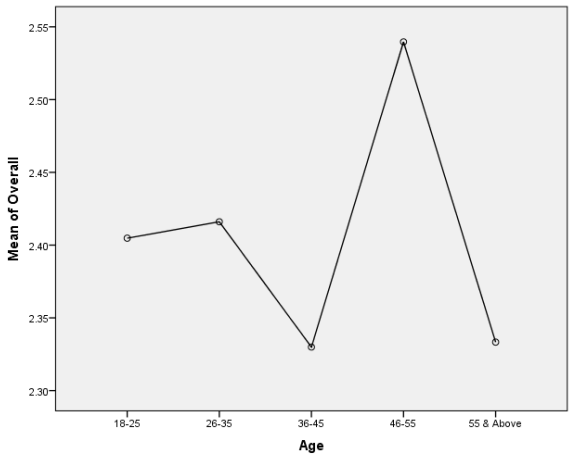


Table 9

As the test is insignificant we do not perform *Post Hoc Test.*

6.8 ONE SAMPLE T-TEST

Objective (3): To compare sample mean of different stress factors with its population mean.

H_0: $\bar{x} = 2.5$

H_1: $\bar{x} \neq 2.5$

A one-sample t-test was conducted for the same.

Table 10: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Reaction_f1	50	2.5200	.49156	.06952
CordialRelation_f2	50	2.4667	.50843	.07190
Reaction_f3	50	2.2100	.63157	.08932
Treatment_f4	50	1.6700	.81822	.11571
CareerAdvancement_f5	50	2.1733	.68756	.09724
OrganiseSelf_f6	50	2.3700	.60449	.08549
Satisfaction_f7	50	3.4000	.51508	.07284
WorkPressure_f8	50	2.2900	.67074	.09486

Means of Table 10 show that the mean value of Satisfaction is the highest (3.4) and the means range from 1.67 to 3.40. All the standard deviations of all the factors are less than 1 which shows that all the respondents were of the same opinion on all the factors.

Table 11: One-Sample Test

	Test Value = 2.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Reaction_f1	.288	49	.775	.02000	-.1197	.1597
CordialRelation_f2	-.464	49	.645	-.03333	-.1778	.1112
Reaction_f3	-3.247	49	.002	-.29000	-.4695	-.1105
Treatment_f4	-7.173	49	.000	-.83000	-1.0625	-.5975
CareerAdvancement_f5	-3.360	49	.002	-.32667	-.5221	-.1313
OrganiseSelf_f6	-1.521	49	.135	-.13000	-.3018	.0418
Satisfaction_f7	12.355	49	.000	.90000	.7536	1.0464
WorkPressure_f8	-2.214	49	.032	-.21000	-.4006	-.0194

Table 11 shows the 't' test of significance shows that the factors (f1, f2, f6) are significantly greater than the test value of 2.5 at 5% level of significance. So, the respondents strongly feel that these factors (Reaction, Cordial Relation, Organise Self) are the cause of their stress when H_0: $\bar{x}$= 2.5 which we accept. .

So, it is proved that since p < 0.05, one says that the factors (f3, f4, f5, f7, f8) the hypothesis H_0: $\bar{x}$= 2.5 is REJECTED because the test is significant and ACCEPT H_1: $\bar{x}\neq$ 2.5. We conclude that stress due to all the factors (f3, f4, f5, f7, f8) are statistically significant among the employees with various job profiles and not statistically significant for f1, f2, f6 at 95% confidence level.

7. Managerial Implications

India is well known for personal bonding and relations with their employees. What is promising for employees is the effectiveness of proactive relationship building strategies undertaken by management. Company executives focused on building and maintaining strong relationships should note that the selection and training of employees who are directly dealing with the customers is critical; expertise, communication, and familiarity to customers are the most effective relationship-building strategies.

The next most effective strategy is for company managers to make investments in generating relationship-based benefits for its employees; furthermore, relationship investment has the added benefit of influencing performance directly. However, managers must recognize that these proactive efforts will be wasted if they leave employee conflict unresolved as the negative influence of conflict on employee relationships is greater in magnitude than that of any other strategy. Thus, some firms could generate higher returns by reallocating their relationship investments to conflict resolution.

8. Limitation Of The Study

While this study helps us to understand the employee stress behavior, it has its limitations. Data was gathered from respondents through convenience sampling in Mumbai only which limits the generalization of the study. While respondents were represented from a wide cross-section settings across Mumbai, it still does not ensure generalisability though it does provide

some evidence that the sample is representative of the population. It can be extended to other parts of the country to get a holistic view.

A second limitation of this study is that many respondents were giving a general view of stress impact on them and not the specific.

9. Future Research Directions

In summary, our research is first of its kind in Mumbai (India) and a first step for examining the importance of employees in the employee loyalty process.

This study represents a step toward better understanding of stress in the relationship between management and employees. Another area for investigation would be to conduct a longitudinal study to determine how stress can be harnessed over time.

10. Conclusion

Due to stress now-a-days people are facing health problems at an early age. Therefore, stress is an issue of major concern today. To have a sound mind and body it is necessary for an individual to maintain his cool and keep himself free from stress.

An employee is the biggest asset for any Company. By giving monetary and non monetary compensation and job satisfaction will go a long way to retain them.

The Future of "Stress Management" is very bright. More and more companies especially BPOs today should opt for stress management to optimize employee performance. Companies especially Call Centers today should realize that keeping their employees happy and free of stress motivates the employee to give more than a 100% to the organization.

Thus, it can be safely stated that "**Stress Management**" has become one of the most critical factors in an organization and it will gain more importance as the market becomes more and more competitive.

11. Suggestions For Organizations

Organizations should conduct several studies on the effects of stress prevention programs. Program activities could include (i) employee and management education on job stress, (ii) changes in organizational policies and procedures to reduce organizational sources of stress, and (iii) establishment of employee assistance programs.

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