

## CHAPTER – V

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# FINDINGS III- TESTING OF

# HYPOTHESES

## CHAPTER - V

### FINDINGS III: TESTING OF HYPOTHESES

Under this chapter, various hypotheses of the research have been tested and the results are established. A total of 21 hypotheses have been tested and detailed here to conclude this study.

#### 5.1 COMPARISON OF STRESS LEVEL OF AIRPORT EMPLOYEES WITH STRESS LEVEL OF EMPLOYEES IN SIMILAR SERVICE SECTOR.

H0: There is no significant difference in stress level of airport employees and employees in other service sectors.

H1: There is significant difference in stress level of airport employees and employees in other service sectors.

**Table 5.1 Stress level of Airport employees and non-airport employees**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
No of Airport employees	65 (25.19%)	102 (39.53%)	74 (28.68%)	17 (6.59%)	258 (100%)	55.15
No of Non-Airport employees	28 (19.85%)	53 (37.58%)	38 (26.95%)	22 (15.60%)	141 (100%)	58.87

The results of a contingency table  $X^2$  statistical test performed at 02:22 on 11-OCT-2011:

*Data: contingency table*

	A	B	C	D	
1	65	102	74	17	258
2	28	53	38	22	141
	<b>93</b>	<b>155</b>	<b>112</b>	<b>39</b>	<b>399</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	60.1	100.	72.4	25.2
2	32.9	54.8	39.6	13.8

Chi-square = 8.88

Degrees of freedom = 3

Probability = 0.031

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis and accept the alternate hypothesis that there is significant difference in the stress level of airport employees compared to their counterparts in other service sectors. The mean score of data is evident that the stress level of non-airport service sector employees are higher compared to the stress level of airport employees.

## 5.2 STRESS LEVEL ACROSS MANAGERIAL LEVELS

H<sub>0</sub>: There is no relation between the managerial level of employees and their stress level.

H<sub>1</sub>: There is a relation between the managerial level of employees and their stress level.

**Table 5.2 Stress level among different managerial levels**

<b>Score</b>	<b>Up to 45</b>	<b>46 – 60</b>	<b>61 – 75</b>	<b>&gt; 75</b>	<b>Total</b>
Stress level	Low	Moderate	High	Very high	
Top Management	10	8	9	2	29
Middle Management	26	49	31	7	113
Lower Management	29	45	34	8	116
Total	65	102	74	17	258

The results of a contingency table  $X^2$  statistical test performed at 04:07 on 18-OCT-2011

Data: contingency table

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	10	8	9	2	29
2	26	49	31	7	113
3	29	45	34	8	116
	<b>65</b>	<b>102</b>	<b>74</b>	<b>17</b>	<b>258</b>

Expected: contingency table

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	7.31	11.5	8.32	1.91
2	28.5	44.7	32.4	7.45
3	29.2	45.9	33.3	7.64

Chi-square = 2.87

Degrees of freedom = 6

Probability = 0.825

Since the calculated chi-square value is less than the table value of 12.592 at a significance level of 0.05 and a degree of freedom of 6, we accept the null hypothesis that there is no significant difference in stress level of employees functioning under different managerial levels and therefore employee stress is independent of managerial levels.

### **5.3 PERSONAL STRESS AND OCCUPATIONAL STRESS**

H0: There is no significant variation in the distribution of personal stress and occupation stress among employees.

H1: There is significant variation in the distribution of personal stress and occupation stress among employees.

**Table 5.3 Personal stress level and occupational stress level**

Score (Stress level)	Low	Moderate	High	Very high	Total	Mean score	Mean unit score
Personal stress	96	85	51	26	258	10.87	2.17
Occupational Stress	65	92	75	26	258	17.86	2.23

The results of a contingency table  $X^2$  statistical test performed at 06:27 on 11-OCT-2011

**Data: contingency table**

	A	B	C	D	
1	96	85	51	26	258
2	65	92	75	26	258
	<b>161</b>	<b>177</b>	<b>126</b>	<b>52</b>	<b>516</b>

**Expected: contingency table**

	A	B	C	D
1	80.5	88.5	63.0	26.0
2	80.5	88.5	63.0	26.0

Chi-square = 10.8

Degrees of freedom = 3

Probability = 0.013

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis and accept the alternate hypothesis that there is significant difference in the distribution of personal stress level and occupational stress level among the airport employees. The mean unit score indicates that employees are more stressed due to occupation factors compared to personal factors.

## 5.4 STRESS LEVEL AND GENDER

### 5.4.1 Overall stress level and gender

H0: There is no relation between the gender of employees and their stress level.

H1: There is a relation between the gender and their stress level.

**Table 5.4 Stress level and gender**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high		
Male	56	85	68	13	222	55.32
Female	9	17	6	4	36	54.05
Total	65	102	74	17	258	

The results of a contingency table  $X^2$  statistical test performed at 04:26 on 11-OCT-2011:

*Data: contingency table:*

	A	B	C	D	
1	56	85	68	13	222
2	9	17	6	4	36
	<b>65</b>	<b>102</b>	<b>74</b>	<b>17</b>	<b>258</b>

*Expected: contingency table:*

	A	B	C	D
1	55.9	87.8	63.7	14.6
2	9.07	14.2	10.3	2.37

Chi-square = 4.03

Degrees of freedom = 3

Probability = 0.258

Since the calculated chi-square value is less than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we accept the null hypothesis that there is no relation between the gender of employees and their stress level.

### 5.4.2 Occupational stress and gender

H0: There is no relation between the gender of employees and their occupational stress level.

H1: There is a relation between the gender and their occupational stress level.

**Table 5.5 Occupational stress and gender**

Score	Up to 14	15 – 19	20 – 24	> 24	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
Male	55	79	65	23	222	17.97
Female	10	13	10	3	36	17.17
Total	65	92	75	26	258	

The results of a contingency table  $X^2$  statistical test performed at 07:26 on 11-OCT-2011

***Data: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	55	79	65	23	222
2	10	13	10	3	36
	<b>65</b>	<b>92</b>	<b>75</b>	<b>26</b>	<b>258</b>

***Expected: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	55.9	79.2	64.5	22.4
2	9.07	12.8	10.5	3.63

Chi-square = 0.264

Degrees of freedom = 3

Probability = 0.967

Since the calculated chi-square value is less than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we accept the null hypothesis that there is no relation between the gender of employees and their occupational stress level.

## 5.5 STRESS LEVEL AND AGE

### 5.5.1 Overall stress level and age

H0: There is no relation between the age group of employees and their stress level.

H1: There is a relation between the age group of employees and their stress level.

**Table 5.6 stress level and age of employees**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
20-30 Years	20	40	28	7	95	55.93
31-40 Years	17	37	31	3	88	55.50
> 40 Years	24	17	14	7	62	54.26
Undisclosed	4	8	1	0	13	51.30
Total	65	102	74	17	258	

The results of a contingency table  $X^2$  statistical test performed at 07:53 on 11-OCT-2011

*Data: contingency table*

	A	B	C	D	
1	20	40	28	7	95
2	17	37	31	3	88
3	24	17	14	7	62
	<b>61</b>	<b>94</b>	<b>73</b>	<b>17</b>	<b>245</b>



**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	23.7	36.4	28.3	6.59
2	21.9	33.8	26.2	6.11
3	15.4	23.8	18.5	4.30

Chi-square = 14.3

Degrees of freedom = 6

Probability = 0.027

Since the calculated chi-square value is more than the table value of 12.592 at a significance level of 0.05 and a degree of freedom of 6, we reject the null hypothesis that there is no relation between the age group of employees and their stress level. From the mean score, it is evident that the employees at the age group of 20-30 years are the highest stressed group followed by the age group of 31-40 years. Employees above 40 years are found considerably stress free compared to their younger generation.

Correlation analysis on the data substantiate the above results and indicates a strong negative correlation between age and the stress level of employees as the coefficient of correlation is (-)ve 0.9629559768371421.

### 5.5.2 Occupational Stress level and age group

H0: There is no relation between the age group of employees and their occupational stress level.

H1: There is a relation between the age group of employees and their occupational stress level.

**Table 5.7 Stress level and age of employees**

<b>Score</b>	<b>Up to 14</b>	<b>15 – 19</b>	<b>20 – 24</b>	<b>&gt; 24</b>	<b>Total</b>	<b>Mean score</b>
Stress level	Low	Moderate	High	Very high		
20-30 Years	28	31	28	8	95	17.46
31-40 Years	14	37	30	7	88	18.22
> 40 Years	20	15	17	10	62	18.34
Undisclosed	3	9	0	1	13	16.07
<b>Total</b>	<b>65</b>	<b>92</b>	<b>75</b>	<b>26</b>	<b>258</b>	

The results of a contingency table  $X^2$  statistical test performed at 07:38 on 11-OCT-2011

***Data: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	28	31	28	8	95
2	14	37	30	7	88
3	20	15	17	10	62
	<b>62</b>	<b>83</b>	<b>75</b>	<b>25</b>	<b>245</b>

***Expected: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	24.0	32.2	29.1	9.69
2	22.3	29.8	26.9	8.98
3	15.7	21.0	19.0	6.33

Chi-square = 11.9

Degrees of freedom = 6

Probability = 0.065

Though the correlation coefficient indicates a strong positive correlation between the age group and occupational stress (0.9220179477748253), this relation is not significant since the calculated chi-square value is less than the table value of 12.592 at a significance level of 0.05 and a degree of freedom of 6. Hence, we accept the null hypothesis that there is no relation between the age group of employees and their occupational stress level.

### **5.5.3 Personal stress level and age group**

H0: There is no relation between the age group of employees and their personal stress level.

H1: There is a relation between the age group of employees and their personal stress level.

**Table 5.8 Personal stress and age group**

Score	Up to 09	10 – 12	13 – 15	> 15	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
20-30 Years	33	34	21	7	95	10.89
31-40 Years	31	33	16	8	88	10.85
> 40 Years	27	16	12	7	62	10.61
Undisclosed	5	2	2	4	13	12.07
<b>Total</b>	<b>96</b>	<b>85</b>	<b>51</b>	<b>26</b>	<b>258</b>	

The results of a contingency table  $X^2$  statistical test performed at 08:10 on 11-OCT-2011

*Data: contingency table*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	33	34	21	7	95
2	31	33	16	8	88
3	21	16	12	7	56
	<b>85</b>	<b>83</b>	<b>49</b>	<b>22</b>	<b>239</b>

*Expected: contingency table*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	33.8	33.0	19.5	8.74
2	31.3	30.6	18.0	8.10
3	19.9	19.4	11.5	5.15

Chi-square = 2.30

Degrees of freedom = 6

Probability = 0.890

Though the correlation coefficient indicates a strong negative correlation between the age group and occupational stress (-0.9244734516418466), this relation is not significant since the calculated chi-square value is less than the table value of 12.592 at a significance level of 0.05

and a degree of freedom of 6. Hence, we accept the null hypothesis that there is no relation between the age group of employees and their personal stress level.

#### 5.5.4 Stress due to social factors and age group

H<sub>0</sub>: There is no relation between the age of employees and their social stress level.

H<sub>1</sub>: There is a relation between the age group and their social stress level.

**Table 5.9 Social stress and age group**

Score	Up to 22	23 -29	30-36	> 36	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
20-30 Years	23	39	19	14	95	27.56
31-40 Years	23	36	24	5	88	26.43
> 40 Years	28	14	11	9	62	25.30
Undisclosed	5	8	0	0	13	23.15
Total	79	97	54	28	258	

The results of a contingency table  $X^2$  statistical test performed at 08:20 on 11-OCT-2011

**Data: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	23	39	19	14	95
2	23	36	24	5	88
3	28	14	11	9	62
	<b>74</b>	<b>89</b>	<b>54</b>	<b>28</b>	<b>245</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	28.7	34.5	20.9	10.9
2	26.6	32.0	19.4	10.1
3	18.7	22.5	13.7	7.09

Chi-square = 16.3

Degrees of freedom = 6

Probability = 0.012

Since the calculated chi-square value is more than the table value of 12.592 at a significance level of 0.05 and a degree of freedom of 6, we reject the null hypothesis that there is no relation between the age group of employees and their social stress level. The employees at the age group of 20-30 years are the highest stressed followed by the age group of 31-40 years. Employees above 40 years are found considerably stress free compared to their younger generation.

The correlation coefficient indicates a linear negative correlation between the age group and occupational stress with a coefficient of correlation (-)0.99999999999887.

## 5.6 STRESS LEVEL: BIAL EMPLOYEES AND OTHER AIRPORT EMPLOYEES

H0: There is no significant difference between stress level of BIAL employees and stress level of other airport employees.

H1: There is significant difference between stress level of BIAL employees and stress level of other airport employees.

**Table 5.10 Stress level of BIAL and non-BIAL employees**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
BIAL	47	72	52	13	184	55.32
Non BIAL	18	30	22	4	74	54.7
Total	65	102	74	17	258	

The results of a contingency table  $X^2$  statistical test performed at 03:10 on 11-OCT-2011

**Data: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	47	72	52	13	184
2	18	30	22	4	74
	<b>65</b>	<b>102</b>	<b>74</b>	<b>17</b>	<b>258</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	46.4	72.7	52.8	12.1	
2	18.6	29.3	21.2	4.88	

Chi-square = 0.318

Degrees of freedom = 3

Probability = 0.957

Since the calculated chi-square value is less than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we accept the null hypothesis that there is no significant difference in stress level of BIAL employees and stress level of other employees.

## **5.7 STRESS LEVEL: IN GENERAL SHIFT AND IN ROUND THE CLOCK SHIFT**

### **5.7.1 Overall stress and rotational shift work**

H0: There is no relation between stress level of employees and rotational shift work.

H1: There is a relation between stress level of employees and rotational shift work.

**Table 5.11 Stress level and shift working**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high	NA	NA
General Shift	31	45	29	7	112	54
Rotating Shift	34	57	45	10	146	56
Total	65	102	74	17	258	

The results of a contingency table  $X^2$  statistical test performed at 04:55 on 11-OCT-2011

**Data: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	31	45	29	7	112
2	34	57	45	10	146
	<b>65</b>	<b>102</b>	<b>74</b>	<b>17</b>	<b>258</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	28.2	44.3	32.1	7.38	
2	36.8	57.7	41.9	9.62	

Chi-square = 1.08

Degrees of freedom = 3

Probability = 0.783

Since the calculated chi-square value is less than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we accept the null hypothesis that there is no relation between stress level of employees and rotational shift work.

### 5.7.2 Occupational stress and shift work

H0: There is no relation between occupational stress level of employees and shift work.

H1: There is no relation between occupational stress level of employees and shift work.

**Table 5.12 Occupational stress level and shift working**

<b>Score</b>	<b>Up to 14</b>	<b>15 – 19</b>	<b>20 – 24</b>	<b>&gt; 24</b>	<b>Total</b>	<b>Mean score</b>
Stress level	Low	Moderate	High	Very high	NA	NA
General Shift	24	37	38	13	112	18.48
Rotating Shift	41	55	37	13	146	17.34
Total	65	92	75	26	258	

The results of a contingency table  $X^2$  statistical test performed at 08:42 on 11-OCT-2011

**Data: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	24	37	38	13	112
2	41	55	37	13	146
	<b>65</b>	<b>92</b>	<b>75</b>	<b>26</b>	<b>258</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	28.2	39.9	32.6	11.3	
2	36.8	52.1	42.4	14.7	

Chi-square = 3.56

Degrees of freedom = 3

Probability = 0.313

Since the calculated chi-square value is less than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we accept the null hypothesis that there is no relation between occupational stress level of employees and shift work.

**5.7.3 Personal stress and shift work**

H0: There is no relation between personal stress level of employees and their shift work.

H1: There is a relation between personal stress level of employees and their shift work.

**Table 5.13 Personal stress level and shift working**

<b>Score</b>	<b>Up to 09</b>	<b>10 – 12</b>	<b>13 – 15</b>	<b>&gt; 15</b>	<b>Total</b>	<b>Mean score</b>
Stress level	Low	Moderate	High	Very high	NA	NA
General Shift	49	30	26	7	112	10.48
Rotating Shift	47	55	25	19	146	11.17
<b>Total</b>	<b>96</b>	<b>85</b>	<b>51</b>	<b>26</b>	<b>258</b>	



The results of a contingency table  $X^2$  statistical test performed at 08:53 on 11-OCT-2011

***Data: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	49	30	26	7	112
2	47	55	25	19	146
	<b>96</b>	<b>85</b>	<b>51</b>	<b>26</b>	<b>258</b>

***Expected: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	41.7	36.9	22.1	11.3	
2	54.3	48.1	28.9	14.7	

Chi-square = 8.62

Degrees of freedom = 3

Probability = 0.035

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis that there is no relation between personal stress level of employees and their shift work. It can be seen from the mean score that the personal stress level of employees working in shift is higher compared to the stress level of employees in general shift.

## **5.8 STRESS LEVEL AND FUNCTIONAL AREA**

H0: There is no relation between stress level of employees and their functional area.

H1: There is a relation between the stress level of employees and their area of work.

**Table 5.14 Stress level and functional area**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high		
Comm.	5	12	11	0	28	55.07
E&M	16	36	22	3	77	54.41
Gen. Mgmt.	5	9	1	1	16	51.93
IT	4	2	3	0	9	50.33
Finance	2	4	3	1	10	58.2
Projects	3	1	3	0	7	52.57
Operations	30	37	30	12	109	56.30
Undisclosed	0	1	1	0	2	62.5
Total	65	102	74	17	258	

The results of a contingency table  $X^2$  statistical test performed at 05:58 on 11-OCT-2011

***Data: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	5	12	11	0	28
2	16	36	22	3	77
3	5	9	1	1	16
4	4	2	3	0	9
5	2	4	3	1	10
6	3	1	3	0	7
7	30	37	30	12	109
	<b>65</b>	<b>101</b>	<b>73</b>	<b>17</b>	<b>256</b>

***Expected: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	7.11	11.0	7.98	1.86
2	19.6	30.4	22.0	5.11
3	4.06	6.31	4.56	1.06
4	2.29	3.55	2.57	0.598
5	2.54	3.95	2.85	0.664

6	1.78	2.76	2.00	0.465
7	27.7	43.0	31.1	7.24

Chi-square = 20.5

Degrees of freedom = 18

Probability = 0.307

Since the calculated chi-square value is less than the table value of 28.869 at a significance level of 0.05 and a degree of freedom of 18, we accept the null hypothesis that there is no relation between stress level of employees and their functional area.

## 5.9 PERSONALITY TYPES AMONG EMPLOYEES

### 5.9.1 Type of personality and gender

H0: There is no significant difference in the distribution of type of personalities between gender groups.

H1: There is significant difference in the distribution of type of personalities between gender groups

**Table 5.15 Type of personalities and gender among airport employees.**

Score	Up to 30	30-40	above 40	Total	Mean score
Stress level	Type-B	Balanced	Type-A		
Male	46	90	86	222	37.86
Female	4	17	15	36	39.78
Total	50	107	101	258	

The results of a contingency table  $X^2$  statistical test performed at 23:25 on 15-OCT-2011

***Data: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>	
1	46	90	86	222
2	4	17	15	36
	<b>50</b>	<b>107</b>	<b>101</b>	<b>258</b>

***Expected: contingency table***

	<b>A</b>	<b>B</b>	<b>C</b>
1	43.0	92.1	86.9
2	6.98	14.9	14.1

Chi-square = 1.88

Degrees of freedom = 2

Probability = 0.391

Since the calculated chi-square value is less than the table value of 5.991 at a significance level of 0.05 and a degree of freedom of 2, we accept the null hypothesis that there is no significant difference in the distribution of personality types among the gender groups.

**5.9.2 Personality types at various levels of management**

H0: There is no significant difference in the distribution of type of personalities among various levels of management.

H1: There is significant difference in the distribution of type of personalities among various levels of management.

**Table 5.16 Personality types at different managerial levels**

Score	Up to 30	30-40	above 40	Total	Mean score
Stress level	Type B	Balanced	Type-A		
Top	3	19	7	29	37.48
Middle	23	51	39	113	37.17
Lower	22	41	53	116	39.22
Total	48	111	99	258	

The results of a contingency table  $X^2$  statistical test performed at 23:43 on 15-OCT-2011

**Data: contingency table**

	A	B	C	
1	3	19	7	29
2	23	51	39	113
3	25	40	51	116
	<b>51</b>	<b>110</b>	<b>97</b>	<b>258</b>

**Expected: contingency table**

	A	B	C
1	5.73	12.4	10.9
2	22.3	48.2	42.5
3	22.9	49.5	43.6

Chi-square = 9.98

Degrees of freedom = 4

Probability = 0.041

Since the calculated chi-square value is more than the table value of 9.488 at a significance level of 0.05 and a degree of freedom of 4, we reject the null hypothesis and accept the alternate hypothesis that there is significant difference in the distribution of personality types

among various levels in Management. Type-A and Type-B trend comes down when the level of management moves upwards. In the top management level, majority (65.5%) are balanced personalities followed by Type-A (24.1%) compared to Type-B (10.4%).

### 5.9.3 Personality types and stress level

H0: There is no significant difference between the stress levels of different type of personalities.

H1: There is significant difference between the stress levels of different type of personalities.

**Table 5.17 Type of personality and stress level**

Type of Personality	Stress level					Mean score
	Up to 45	46 – 60	61 – 75	> 75	Total	
	Low	Moderate	High	Very high		
Type- B personalities	29	13	6	2	50	46.1
Balanced personalities	26	57	19	5	107	53.44
Type - A personalities	10	32	49	10	101	61.43

The results of a contingency table  $X^2$  statistical test performed at 08:38 on 1-NOV-2011

*Data: contingency table*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
1	29	13	6	2	50
2	26	57	19	5	107
3	10	32	49	10	101
	<b>65</b>	<b>102</b>	<b>74</b>	<b>17</b>	<b>258</b>

*Expected: contingency table*

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	12.6	19.8	14.3	3.29
2	27.0	42.3	30.7	7.05
3	25.4	39.9	29.0	6.66

Chi-square = 65.7  
 Degrees of freedom = 6  
 Probability = 0.000

Since the calculated chi-square value is more than the table value of 9.488 at a significance level of 0.05 and a degree of freedom of 6, we reject the null hypothesis and accept the alternate hypothesis that there is significant difference in the stress levels of different types of personalities. Even if we test with a significance level of 0.001 or 0.0005, still the calculated value is higher compared to the table values of 22.458 and 24.104 respectively.

From the mean score, it is evident that the Type-A personalities are much more prone to stress compared their Type-B counterparts with the balanced personalities falling in between.

### 5.10 IMPACT BY WORK AND ORGANIZATIONAL FACTORS

H0: There is no significant difference in the stress impact due to work factors and organizational factors.

H1: There is significant difference in the stress impact due to work factors and organizational factors.

**Table 5.18 Impact on employees by work and OC factors.**

Stress impact level	No impact	Low impact	High impact	Acute impact	Total	Mean score	Mean unit score
No of employees affected due work factors	50	130	64	14	258	22.83	1.90
No of employees affected due OC factors	25	119	73	41	258	43.05	1.96

The results of a contingency table  $X^2$  statistical test performed at 00:25 on 16-OCT-2011

*Data: contingency table*

	A	B	C	D	
1	50	130	64	14	258
2	25	119	73	41	258
	<b>75</b>	<b>249</b>	<b>137</b>	<b>55</b>	<b>516</b>

**Expected: contingency table**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1	37.5	124.	68.5	27.5
2	37.5	124.	68.5	27.5

Chi-square = 22.7

Degrees of freedom = 3

Probability = 0.000

Since the calculated chi-square value is much more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis that there is no significant difference in the stress impact caused by work factors and organizational factors. It is evident from the distribution and the mean score that the organizational factors have much bearing on the cause of occupational stress compared to the factors related to work.

**5.11 STRESS BEFORE AND AFTER THE STRESS MANAGEMENT WORKSHOP**

H0: There is no significant difference in the stress level in experiment group before and after the workshop.

H1: There is significant difference in the stress level in experiment group before and after the workshop.

**Table 5.19 Stress level of experiment group before and after the workshop**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean
Stress level	Low	Moderate	High	Very high		
Score before attending workshop	0	3	11	7	21	66.46
Score after attending workshop	5	6	7	3	21	58.86

The results of a contingency table  $X^2$  statistical test performed at 23:49 on 27-OCT-2011



**Data: Contingency table**

	A	B	C	D	
1	0	3	11	7	21
2	5	6	7	3	21
	<b>5</b>	<b>9</b>	<b>18</b>	<b>10</b>	<b>42</b>

**Expected: Contingency table**

	A	B	C	D
1	2.50	4.50	9.00	5.00
2	2.50	4.50	9.00	5.00

Chi-square = 8.49

Degrees of freedom = 3

Probability = 0.037

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis that there is no significant difference in the stress level of employees before and after attending stress management workshop sessions. It is evident from the stress level distribution and the mean score that the stress level came down drastically in employees after 4 days workshop in 4 weeks' time.

## **5.12 STRESS LEVEL BEFORE AND AFTER THE YOGA WORKSHOP**

H<sub>0</sub>: There is no significant difference in the stress level in experiment group before and after the yoga workshop.

H<sub>1</sub>: There is significant difference in the stress level in experiment group before and after the yoga workshop.

**Table 5.20 Stress level of experiment group before and after the workshop**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high		
After SM workshop	5 (24%)	6 (29%)	7 (33%)	3 (14%)	21	66.46
After Yoga workshop	7 (33%)	13 (62%)	1 (5%)	0 (0%)	21	49.32

The results of a contingency table  $\chi^2$  statistical test performed at 23:47 on 4-FEB-2012

**Data: contingency table**

	A	B	C	D	
1	5	6	7	3	21
2	7	13	1	0	21
	<b>12</b>	<b>19</b>	<b>8</b>	<b>3</b>	<b>42</b>

**Expected: contingency table**

	A	B	C	D
1	6.00	9.50	4.00	1.50
2	6.00	9.50	4.00	1.50

Chi-square = 10.4

Degrees of freedom = 3

Probability = 0.015

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis that there is no significant difference in the stress level of employees before and after attending yoga workshop sessions. It is evident from the stress level distribution and the mean score that the stress level came down extremely in employees after 10 weeks long workshop.

### 5.13 STRESS LEVEL BEFORE AND AFTER THE EXPERIMENTS

H0: There is no significant difference in the stress level in experiment group before and after the experiments (SM workshop and Yoga workshop).

H1: There is significant difference in the stress level in experiment group before and after experiments (SM workshop and Yoga workshop).

**Table 5.21 Stress level of experiment group before and after the workshop**

Score	Up to 45	46 – 60	61 – 75	> 75	Total	Mean score
Stress level	Low	Moderate	High	Very high		
Before experiment	0 (0%)	3 (14%)	11 (52%)	7 (33%)	21	66.46
After SM workshop	5 (24%)	6 (29%)	7 (33%)	3 (14%)	21	58.86
After Yoga workshop	7 (33%)	13 (62%)	1 (5%)	0 (0%)	21	49.32

The results of a contingency table  $X^2$  statistical test performed at 23:58 on 4-FEB-2012

**Data: contingency table**

	A	B	C	D	
1	0	3	11	7	21
2	7	13	1	0	21
	<b>7</b>	<b>16</b>	<b>12</b>	<b>7</b>	<b>42</b>

**Expected: contingency table**

	A	B	C	D
1	3.50	8.00	6.00	3.50
2	3.50	8.00	6.00	3.50

Chi-square = 28.6

Degrees of freedom = 3

Probability = 0.000

Since the calculated chi-square value is more than the table value of 7.815 at a significance level of 0.05 and a degree of freedom of 3, we reject the null hypothesis that there is no significant difference in the stress level of employees before and after undergoing the experimental sessions. It is evident from the stress level distribution and the mean score that the stress level came down severely in employees after 10 weeks long workshop.

It is important to note that the probability for error in the test is 'zero'; that means, even if we test the hypothesis at the lowest significant level of 0.0005, the null hypothesis will get rejected.