OCCUPATIONAL STRESS AND PERSONALITY TRAITS IN THE INDIAN MANUFACTURING SECTOR: AN ANALYTICAL STUDY

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ABSTRACT

Stress has become an inherent factor in each and every type of occupation. It is no longer considered as a personal problem or related to specific occupation. Eliminating stress from workplace is impossible but addressing issues related to employee stress on priority basis could go a long way toward creating a harmonious environment to the organization. So, this study aims at finding the major antecedents of occupational stress among blue collar employees working in Indian manufacturing Sector. In addition, it will also examine the impact of personality traits of blue collar employees on their perceived level of occupational stress at workplace. The study is based on the primary data collected through structured questionnaire from 108 blue collar workers working in different manufacturing set-ups of Haryana and NCR region. Findings of the study reveals that the major sources of distress among the blue collar employees are working environment, job role, interpersonal relationship, growth & development opportunities and work control. Further, the comparative analysis of personality traits and occupational stress, shows that personality and occupational stress are significantly related to each other and personality traits affects the level of occupational stress among blue collar employees in Indian manufacturing sector. Among five personality traits used in the study; Neuroticism is found highly responsible for occupational stress among blue collar employees in Indian manufacturing sector.

Keywords: Occupational Stress, Personality Traits, Indian Manufacturing Sector, Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness, and Employees.

1. Introduction

Stress is a fact of modern life. It has in fact become an unavoidable part of today’s fast-paced, competitive world. Learning to live and get ahead in this technological advent world is not possible without getting stressed. Stress has been defined by numerous researchers in their own way over the years. But originally it was introduced by Selye Hans in 1936 in life sciences. The term ‘stress’ was originated from the Latin word ‘stringere’, which means the experience of pain, torture, physical adversity and starvation. According to Selye (1936), the non-specific response of the body to any demand placed upon for change, is stress.
Further in 1956, Selye defined stress as, “any external event or internal drive which threatens to upset the organismic equilibrium”. Stress is mainly related to the response of our body to demanding circumstances. It can be a result of both, positive and negative pressures or experiences. In a medical or biological context stress is a physical, mental, or emotional factor that causes bodily or mental tension (Palmer, et al., 2003). Stress is also defined as, “a dynamic condition in which an individual is confronted with an opportunity, constraint or demand related to what he/she desires and for which the outcome is perceived to be both uncertain and important” (Robbins, 1999).

Stress has become an inbuilt factor in almost all kind of professions and the term used to describe this work related stress is called ‘Occupational Stress’. However the terms like job stress, work stress, occupational stress and work related stress are generally used interchangeably to represent occupational stress (Dollard, 2003). This stress may be associated with the work or the responsibilities related to it, or by the situation or pressure prevailing in the organizational culture, or by the leadership style of seniors, or by the personality conflicts of the employees itselfs. The existence of stress in a profession can be a motivating factor as it urges the employees to thrive for brilliance and supremacy. However, excess amount of stress can result in problems like lack of concentration, lower self-confidence and productivity, less participation and involvement in routine tasks at workplace and many more like this. The existence of work related stress is entirely widespread in manufacturing establishments which involved shop floor or blue collar workers. As our study focuses on the manufacturing sector in India, so the group that is being studied is blue collar employees. In manufacturing sector, blue collar employees are that part of human resource of a company which is considered the most valuable assets of any company as it is the man (human resource) who gives movement to other three M’s of the company which are; material, machine and money. The extent to which they experience stress during their work turns into poor performance, leading to poor productivity of the organization. So, if treated well, blue-collar employees can prove to be a competitive advantage for a firm as the productivity of workforce decides the prosperity of an organization.
During the early nineties, the term ‘stress’ was used to represent both, the reasons/causes and the effects experienced of these pressures. But in recent times, ‘stressor’ is being used by the researchers for the situations, reasons that evoke stress. Some of the stressors responsible for the occurrence of occupational stress among blue collar employees can be; poor working conditions, work overload, poor leadership, poor interpersonal relationships, role ambiguity, lack of career growth and development opportunities and many more (Zafir, 2009, Cooper et al., 2001). Apart from organizational factors, the most studied stressor in the field of occupational stress at workplace is personality conflicts. It is the most important reason which is highlighted by many researchers prevailing in the organizations. Big five Inventories model has described the personality traits under five heads such as; Extraversion (active, high energy, talkative, dominance, sociability, affectionate and expressiveness), Agreeableness (trusting, pro-social or cooperative, altruism, tender mindedness), conscientiousness (well organized, impulse control, hard-working, task orientation), Neuroticism (Anger, anxiety, irritability and temperamental) and Openness (it exemplifies the complexity of an individual’s mental and experimental life like active imagination, curiosity, intellectual) (John & Srivastava, 1999). Researchers have found positive and significant relationship between different personality traits and level of occupational stress among blue collar employees. Thus, due to the importance of personality traits in the stress disposition, efforts have been made through the present study to measure the impact of personality traits over occupational stress perceived by the blue collar employees in Indian manufacturing sector.

2. Review of Literature

The technological revolution in all spheres of life has drastically changed the conventional pattern of doing things in all the sectors. These changes are the results of policies like globalization, privatization and has led to increased competition in all sectors. The manufacturing sector is of course of no exception. Occupational stress is one of the end products of this increased competition. According to the World Health Organisation, in India occupational stress will cause approx. 35% of cardiac disease related deaths by 2030 (Ramji, 2010). Thus it becomes more important for the organization to give more attention in
dealing any work related stress of blue collar employees.

Numerous studies have been conducted by the researchers to measure stress among workers. Occupational stress among blue collar employees may be caused due to a variety of reasons like, working conditions, lack of control over job, low support from supervisor, powerlessness, low morale, organizational climate, inadequate salary, noise etc. (Ingram & Pilla, 2007; Leka, et. al., 2005; Lin, 2007; Siu, 1996). According to Kvarnstorm, (1997), assembly line work is often hectic for workers because it is always performed in a hazardous work environment with several physical hurdles or problems to accomplish the task. Technological development in large scale organizations has complicated the tasks, especially in assembly-line work. Also, Supervisors do not show any interest in creating a harmonious work place environment for the workers. Makhbul & Idrus, (2009) studied the relationship between ergonomics factors related to workplace and the stress outcomes among blue collar employees in Malaysia. The major finding showed that each ergonomics workstation factor and component had a significant relationship with the work stress outcomes of the workers. However, health, work area design, shift work, humidity system and working hours are the main factors which were found to be significant relationship with work stress outcomes. Further, in order to minimize the work stress related outcomes, it is suggested that the concept of ergonomically designed workstation should be promoted in the organizations. Northwestern National Life (1991) in a survey found that, job related stress was reported as the most significant stressors (among all the stressors in life) by approx. 25% of employees who participated in the survey. With no exception, the prevalence of work stress among industrial workers in India is also very high. (Rathi, 2010) conducted a study among industrial workers in South India and observed that the existence of work related stress was twice in small scale industries as compared to large scale industries. James, (1982) conducted a study among factory workers, to measure the relationships between job conditions and stress prevalence. It was found from the study that job conditions have a significant relationship with occupational stress among factory workers.

The stress faced by workers at their workplace is substantial. It poses a great threat not only to the mental and physical
health of workers but also to the organizations they work for (Ingram and Pilla, 2007; Kryiacou, 1989). (Rahimi et al., 2008) presented the pattern of stress among workers of car manufacturing industry in Iran. The study investigated time pressure as the most severe stressor. Apart from this, mode of payment & evaluation, and interaction with people and machines were also reported as the key stressors among workers. It was also found that the risk of injuries during work was significantly higher among workers experiencing high stress than those who did not experience stress. Lin, (2007) in his study observed the occupational stress of aircraft maintenance personnel and found stress positively related to poor physical health and work injury among the workers. Further, occupational stress was also found to be negatively related to job satisfaction. When considering the most significant stressors, results show that noisy area along with inadequate salary are the most stressful events reported by the maintenance personnel. Evidence also suggests that occupational stress is the major cause of absenteeism, increasing turnover intentions, lower productivity and industrial accidents (Ryland & Greenfield, 1991). Experiencing stress in professional life will take a toll on the workers working in the organizations, which in turn will result in increase in burnout and turnover intentions and decrease in level of engagement, participation, productivity and retention in the organization (Bryner, 2006; Weaver, 2003). Occupational stress can directly affect the performance of the employees, which leads to decrease in the overall production level of the organization. Less production will lead to fewer profits to the company and can even create a negative image of the company in the market. Thus ultimately it’s the organization that will bear the consequences of increased level of stress among its employees in form of poor labour-relations followed by high labour turnover, low morale and output of the workforce in the organization (Ivancevich & Matteson, 1980).

Although there are several work and organization related factors causing stress among employees, though the role of individual differences in causing stress cannot be ignored. Researchers have also conducted various studies to examine the relationship between occupational stress and personality traits and many of them found that personality traits are directly related to the level of occupational stress experienced by the employees. Subburaj, (2012) in his study, has used all the five personality traits under big five inventories
model and all the five personality traits were found to be positively and significantly correlated with occupational stress. In a similar study, Cheng, (2015) also tried to find out the effects of personality traits (based on Five Factor Model) on the stress perceived by the manufacturing workers in China and concluded that FFM traits affect the way individuals perceive stress. The study also revealed that relationship between neuroticism with job satisfaction was mediated by the perceived level of conflict regarding the role in the organization. Fontana & Abouserie, (1993) reveals that there is a high correlation between stress and neuroticism, introversion, and psychoticism. Conard & Matthews, (2008) also found neuroticism as the key driver of perceived stress among employees and not self-reported workload. Neuroticism and agreeableness are also found to be negatively related to job satisfaction and positively related to distress, depression and somatic complaint (Berg & Pitariu, 2005). Mills & Huebner, (1998) states that neuroticism and introversion has significant relationship with occupational stress. Cano-Garcia et al. (2005) conducted a study to measure the relationship between personality and occupational stress and concluded that occupational stress is affected by the personality variable. Personality traits and occupational stress has been found to positively and significantly relate with each other among academic managers at higher education level (Zamir et al., 2014). Most of the studies found that neuroticism was positively related to occupational stress (Deary et al., 1996; Mills & Huebner, 1998; Kokkinos, 2005). For the researchers working in the field of stress intervention, studying stress and personality relationship has important implications; as stress can be effectively mitigated by focusing on traits and cognitions (Conard, 2008).

During the last few years the manufacturing sector had undergone rapid and striking changes. Policy reforms in National Manufacturing Policy and introduction of newer campaigns like ‘Make in India’ whose ultimately aims is to increase the share of manufacturing sector in the Gross Domestic product, paves the way for increased competition, introduction of new technologies, downsizing etc. Recognizing that these reforms and policies to promote manufacturing sector, must have a multiplier effect on the pressure and stress experienced by the employees in terms of job related tension, job dissatisfaction, lower performance etc., this
study was designed. In addition, it will also investigate the impact of their individual difference in terms of five personality traits Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness, over perceived level of occupational stress among blue collar employees in Indian manufacturing sector.

3. Objectives

Considering occupational stress as a debilitating syndrome among blue collar employees in Indian manufacturing sector, this study has been undertaken with the following objectives:

1. To identify the major antecedents of occupational stress among blue collar employees in Indian manufacturing sector.
2. To measure the perceived level of occupational stress among blue collar employees in Indian manufacturing sector.
3. To measure the impact of different types personality traits on the perceived level of occupational stress among blue collar employees in Indian manufacturing sector.

4. Research Methodology

Methodology is a way to analyse and solve the research problem systematically. This section discusses the research methodology adopted in the present study to approach the objectives of the study. Research methodology includes research questions and formulation of hypothesis, sampling & data collection, survey instruments used along with standardising them scientifically establishing validity and reliability and statistical techniques used for data analysis.

4.1 Research Questions and Formulation of Hypotheses

4.1.1 What are the major antecedents which lead to occupational stress among blue collar employees of Indian Manufacturing Sector?

4.1.2 What is the perceived level of occupational stress among the blue collar employees of Indian manufacturing sector?

4.1.3 How different types of personality traits affect the occupational stress in Indian manufacturing sector?

Null Hypothesis 1 (H01): There is no relationship between Extraversion and occupational stress.
Null Hypothesis 2 (H02): There is no relationship between Agreeableness and occupational stress.

Null Hypothesis 3 (H03): There is no relationship between Conscientiousness and occupational stress.

Null Hypothesis 4 (H04): There is no relationship between Neuroticism and occupational stress.

Null Hypothesis 5 (H05): There is no relationship between Openness and occupational stress.

4.2 Data Collection

Both the primary and secondary data has been used in the current study. Secondary data has been collected from various publications, journals (online and offline), internet, newspapers and from the subject related books to support the theoretical constructs of the study. Primary data for the study was collected from the blue collar employees working in different manufacturing set-ups of Haryana and NCR region. For the purpose of data collection, two research instruments: Questionnaire A for measuring the perceived level of occupational stress among the blue collar employees in Indian manufacturing sector and Questionnaire B for understanding the different personality traits of blue collar employees in Indian manufacturing sector have been used. Questionnaire A was developed on the basis of review of existing literature and after an in-depth discussion with experts of this field and thus considering 17 statements. All responses were recorded on Likert’s five point scale, where 1 represent Strongly Disagree and 5 represent Strongly Agree. Further, Questionnaire B which was used to determine the personality traits of respondents, has been derived from the study of (John and Srivastava, 1999) considering 44 statements and all responses were recorded using Likert’s five point scale where 1 means Strongly disagree and 5 means Strongly Agree. Apart from this, a general questionnaire was also used to collect the demographic information like age, marital status, experience and the like, of the respondents.

4.3 Sampling and Data Analysis

Total 125 questionnaires were distributed to the blue collar employees of Haryana and NCR region among those only 108 questionnaires which were duly filled up by the respondents has been used for the analysis purpose. Data analysis was done using statistical package Statistical Package for Social Sciences 20.0, particularly for
Descriptive Statistics, Chi-Square Test and
Principal Component Analysis.

Table 1: Reliability Test for Questionnaire A and B

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Number of Respondents</th>
<th>Number of Statements</th>
<th>Cronbach’s Alpha</th>
<th>Method of Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Stress (A)</td>
<td>108</td>
<td>17</td>
<td>0.7962</td>
<td>Personal Interaction and Emails</td>
</tr>
<tr>
<td>Personality Traits (B)</td>
<td>108</td>
<td>44</td>
<td>0.9283</td>
<td>Personal Interaction and Emails</td>
</tr>
</tbody>
</table>

Area for the Study: Haryana and NCR Region (Delhi, Gurgaon, Faridabad)
Software used: SPSS 20.0

4.4 Limitations of the study

A main limitation to the current study was the problem faced during the data collection. The data was collected randomly from the blue-collar employees as per their availability at different industrial locations of Haryana and NCR thus limiting the sample size to 125 only. Further, due to ethical consideration and respondents concern about the data being used for survey, we assured that their information would keep confidential. So, the respondents filled all the questionnaires anonymous.

5. Results and Discussions

5.1 Research Question 1: What are the major antecedents leading to occupational stress among blue collar employees in Indian Manufacturing Sector?

In order to find out the major antecedents which lead to the occupational stress among blue collar employees in Indian Manufacturing Sector, factor analysis was applied to the give dataset. The results from factor analysis are as follows:
Table 2: Cronbach Alpha and KMO Test Value

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
<td>0.7962</td>
</tr>
<tr>
<td>No. of Items</td>
<td>17</td>
</tr>
</tbody>
</table>

KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | 0.922 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 127263.640* |

*Significant at 1 per cent level of significance

Table 2 summarizes the values of KMO test and Cronbach Alpha of the survey instrument. As shown above, the value of cronbach alpha is 0.7962 which is above 0.7, thus acceptable and shows the reliability of the instrument used in the study. The value of KMO is 0.922, which is close to 1, thus showing overall adequacy of given data for the factor analysis. Bartlett’s sphericity test and Chi-Square test also found highly significant at 1 per cent level of significance showing the validity of given data for the factor analysis.

Table 3 shows the results of factor analysis applied to this set of data by principal component analysis with varimax rotation. It is a method highly used in factor analysis. Five factors have been extracted from the rotated solution given by the varimax method.

Table 3: Factor Loadings using Varimax Rotation (PCA) method

<table>
<thead>
<tr>
<th>Item description</th>
<th>Factor Loadings</th>
<th>Name of Factor identified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor physical working conditions</td>
<td>0.730</td>
<td>Working Environment</td>
</tr>
<tr>
<td>Excessive workload</td>
<td>0.629</td>
<td></td>
</tr>
<tr>
<td>Lack of resources</td>
<td>0.523</td>
<td></td>
</tr>
<tr>
<td>Badly designed shift system</td>
<td>0.511</td>
<td></td>
</tr>
<tr>
<td><strong>Factor 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role overload</td>
<td>0.697</td>
<td></td>
</tr>
<tr>
<td>Ambiguity in job role.</td>
<td>0.551</td>
<td></td>
</tr>
</tbody>
</table>
As shown above, most of the items are highly loaded on to the first factor and second factor and then equally on third, fourth and fifth factors. All the five factors were accounting 86 per cent of variance. Thus, from the Principal Component Analysis five factors have been created. The first factor consists 4 items; all are related to the conditions and environment of present in an organization within which the blue collar employees are supposed to work. Thus the factor is named as ‘Working Environment’.

All the employees are assigned some role and responsibilities in their job and they are expected to fulfil them with their potential. But if not assigned properly, it can create a chaotic situation for the employee. The second factor refers the same. As indicated above, the second factor consists 4 items; all items are related to the role of an employee in an organisation which defines the role of his job, thus the name given to the second factor is ‘Job Role’.
Harmonious relationship at workplace plays a very important life in a professional’s life. At workplace, all of us require some kind of support or help from our team members, seniors and colleagues. The third factor indicated the same. It consists 3 items; all the items are related to the relationship of an employee with his or her supervisor and co-workers in the organisation and therefore named as ‘Interpersonal Relationship’.

Existence of opportunities for betterment and growth works as a motivator for workers or employees irrespective of their hierarchical level. The fourth factor consists 3 items; all items are related to the career advancement and development opportunities for the workers in the organisation thus the name given to the fourth factor is ‘Growth & Development Opportunities’. The absence of such opportunities will lead to employee dissatisfaction ultimately resulting in stress.

Fifth factor consists 3 items; all items are related to the pace of control over the work of an employee in the organisation. Minimal control of employees over their job when combined with high job demands, contribute to higher level of stress among workers (Chiang et. al, 2010). So, the fifth factor is termed as ‘Work Control’.

Research Question 2: What is the level of occupational stress perceived by the blue collar employees of Indian manufacturing sector?

In this study level of Occupational stress has been measured as a mean of all the five factors which lead to occupational stress as reported by the respondents i.e., blue collar employees of Indian manufacturing sector. Five factors which were extracted using factor analysis have been taken here for measuring the occupational stress.

Occupational Stress = \{\text{Mean value of factor 1 (Working Environment)} + \text{mean value of factor 2 (Job Role)} + \text{mean value of factor 3 (Interpersonal Relationship)} + \text{mean value of factor 4 (Growth & development Opportunities)} + \text{mean value of factor 5 (Work Control)}\} / 5.

\[
\text{Occupational Stress} = \frac{(3.96+3.88+3.79+3.73+3.69)}{5} \\
\text{So, the average Occupational Stress of total respondents is 3.81.}
\]
In order to make the values of occupational stress more understandable and useful for further analysis, the perceived level of occupational stress as reported by all the respondents was measured individually by using the above formula and then categorized into three main categories. Three main categories of occupational stress level are such as; ‘3’ which means ‘high’, ‘2’ which means ‘average’ and ‘1’ which means ‘low’. Below is the Fig. 1, which shows the three categories of occupational stress; high, low and average.

\[ \text{Occupational Stress} \]

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{occupational_stress.png}
\caption{Level of occupational stress as experienced by the respondents}
\end{figure}

Results shows that the large scale prevalence of occupational stress among blue color employees in Indian manufacturing sector as majority of the respondents i.e., 82.4%, participated in the survey reported that perceived level of occupational stress is average and above. Among these, the percentage of respondents with high level of occupational stress is 46.3 percent, while the rest 36.1 percent respondents are those for whom average level of occupational stress has been recorded. The percentage of respondents with low level of occupational stress is the lowest i.e. 17.6 percent. Therefore, it can be concluded that occupational stress persists at high level, among blue collar employees in Indian manufacturing sector is high.

\textbf{Research Question 3}: How different types of personality traits affect the occupational stress in Indian manufacturing sector?
Null Hypothesis 1 (H₀₁): There is no relationship between Extraversion and occupational stress.

Null Hypothesis 2 (H₀₂): There is no relationship between Agreeableness and occupational stress.

Null Hypothesis 3 (H₀₃): There is no relationship between Conscientiousness and occupational stress.

Null Hypothesis 4 (H₀₄): There is no relationship between Neuroticism and occupational stress.

Null Hypothesis 5 (H₀₅): There is no relationship between Openness and occupational stress.

In order to determine the relationship between occupational stress and different types of personality traits, cross tabulation of occupational stress and personality traits has been conducted using Chi-Square test and the results of same have been shown in Table 4 and Table 5 as follows. As evident from above analysis, all the five types of personality traits i.e., Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness were found to have significant relationship with the level of occupational stress experienced by blue collar employees in Indian manufacturing sector.

### Table 4: Personality Traits* Occupational Stress

<table>
<thead>
<tr>
<th>Personality Traits</th>
<th>Low Occupational stress</th>
<th>Average Occupational stress</th>
<th>High Occupational stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extraversion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>3</td>
<td>9</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>% within Personality Traits</td>
<td>14.3%</td>
<td>42.9%</td>
<td>42.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>% within Personality Traits</td>
<td>27.8%</td>
<td>33.3%</td>
<td>38.9%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table 5: Results of Chi-square test

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>17.376</td>
<td>8</td>
<td>0.026</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>17.870</td>
<td>8</td>
<td>0.022</td>
</tr>
</tbody>
</table>

On the basis of cross tabulation given in Table 4 it can be interpreted that occupational stress are found to be highest in those employees whose personality type is Neuroticism personality followed by employees with Openness personality trait. While the occupational stress is found to be lowest in those employees whose personality type is Conscientiousness personality. Thus overall it can be concluded that different styles of personality traits affects the level of occupational stress among blue collar employees differently. Therefore, all the five null hypothesis which were formulated to check the relationship between

<table>
<thead>
<tr>
<th>Conscientiousness</th>
<th>Count</th>
<th>7</th>
<th>6</th>
<th>3</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Personality Traits</td>
<td>43.8%</td>
<td>37.5%</td>
<td>18.8%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neuroticism</th>
<th>Count</th>
<th>1</th>
<th>10</th>
<th>21</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Personality Traits</td>
<td>3.15</td>
<td>31.2%</td>
<td>65.6%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Openness</th>
<th>Count</th>
<th>3</th>
<th>8</th>
<th>10</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Personality Traits</td>
<td>14.3%</td>
<td>38.1%</td>
<td>47.6%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>Count</th>
<th>19</th>
<th>39</th>
<th>50</th>
<th>108</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Personality Traits</td>
<td>17.6%</td>
<td>36.1%</td>
<td>46.3%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>
personality traits and occupational stress stands to be rejected. Thus it is proved that personality traits and occupational stress has significant relationship with each other. In order to see the impact of personality traits over occupational stress, regression analysis has been conducted and the results of regression analysis are as follows:

Table 6 shows the variables in the equation, their beta value, their t-value and the significance level. The equation which emerged after the process was as follows:

\[ Y = a + bX \]

Where \( Y \) (Dependent Variable) = Occupational Stress (Mean value of all factors of occupational stress for each respondent).

\( X \) (Independent Variable) = Personality Traits (Mean Value of all the items of questionnaire used for personality traits, for each respondent)

\( a \) is constant while \( b \) is beta value.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable: Occupational Stress (OS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Constant</td>
<td>12.1</td>
</tr>
<tr>
<td>Personality Traits</td>
<td>1.18</td>
</tr>
</tbody>
</table>

R Square = 0.837, Adjusted R Square = 0.715

ANOVA RESULTS: (F-Test = 53.372 which is significant at 0.01 level)

The ANOVA results depicts that a significant model emerged, \( F (1, 107) = 53.372, p < 0.01 \) at 1 percent level of significance. The regression results indicate that personality traits is positively and significantly related to Occupational stress (OS). Regression coefficient is statistically significant at 1 percent level of significance. The independent variable of regression model can explain 71.5 percent of variation in the value of dependent variable, Adjusted R Square = 0.715. Thus overall it can be interpreted that personality traits and occupational stress has a positive and significant relationship which shows that the perceived level of occupational stress among blue collar highly depends upon the types of personality traits of the
blue collar employees in Indian manufacturing sector.

**Conclusion:**

Thus identifying the factors in an organization which may lead to occupational stress among blue collar employees is important for both the organization (in terms of production level) and employees (physical and mental health). Keeping in view the harmful effects of increased level of occupational stress and importance of identifying the factors which lead to occupational stress, the current study has made a sincere effort to measure the level of occupational stress and factors responsible for the occupational stress among blue collar employees, particularly in Indian manufacturing sector. The results of the study indicated the large scale prevalence of occupational stress among blue color employees in Indian manufacturing sector as majority of the respondents participated in the survey reported that their perceived level of occupational stress is above average. In addition, the major five factors contributing to the occupational stress among blue collar employees are: working environment, job role, interpersonal relationship, growth & development opportunities and work control as evident from previous studies (James, 1982; Lin, 2007; Parkes, 2007; Rahimi et. al., 2008) as well. The productivity of blue collar employees may get affected due to these factors resulting in a significant increase in the level of occupational stress.

Further, from the comparative analysis of personality traits and occupational stress it was found that personality traits and occupational stress are significantly related to each other and personality traits affects the level of occupational stress among blue collar employees in Indian manufacturing sector. Among five personality traits used in the study; Neuroticism is found highly responsible for occupational stress among blue collar employees in Indian manufacturing sector which is similar to the observation made by Deary et al., (2014); Mills & Huenbner, (1998); and Kokkinos, (2005) in their studies. The findings of this study will enhance the understanding of policy makers regarding the concept of occupational stress prevalent in every sector today. The level of productivity can be increased by reducing the level of occupational stress among blue collar employees because these employees have direct role in production process. Thus, it will help the industrial sector to frame the
strategies for reducing the level of stress generally experienced by the blue collar workforce. The further scope of the study is to broaden this line of work by making sector and state wise comparison for deeper understanding of stress. It will also help the organizations to detect the stress at early stage.

References


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**List of Figures:**

Figure 1. Level of occupational stress as experienced by the respondents

**List of Tables:**

Table 1: Reliability Test for Questionnaire A and B
Table 2: KMO Test Value
Table 3: Factor Loadings of items using Varimax Rotation (PCA)
Table 4: Personality Traits* Occupational Stress
Table 5: Results of Chi-square test
Table 6: Regression Results