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Identification of Factors Associated with Employee Absenteeism: "A Lock Industry Case

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ABSTRACT

A lot of companies are flying blindly when dealing with people in India. There's a lack of real-time and regular information on workplace patterns of employees. The Indian workforce is getting younger, and companies need a real-time view of the workforce. There is a clear dearth of engagement options for the last-mile employees, the so called *'aam aadmi'* in companies. Productivity measures are stringent for them but engagement initiatives for them are relatively low. The initiatives to engage are usually restricted to the senior employees.

Employee absenteeism is a costly personnel problem attracting the attention of theoreticians and practitioners alike. Employee's absence rates, its effect on productivity and are topics of discussion among many country as high rates of employee absence may signal weak labour-management relations, resulting in low productivity. The disparities are acute and can create a real breakdown with regards to operational excellence. Absenteeism, primarily unplanned absence, is a huge challenge in India across sectors. Globally, 30-35% of the pay costs of companies are absence-related, which are expenses incurred on the leaves granted to employees. 10% of the payroll costs are linked to unplanned absence globally. In India, this cost is about 15-20%. It means if a company has placed 1,000 people for a project, and 200 have not turned up, it is an unplanned expense that will directly hit the bottom line. If the cost leakage due to workforce mismanagement is 3-5% globally, in India it is three times that of the global numbers. Lack of manpower planning and skilling are some other challenges that Indian companies across sectors face.

The purpose of conducting this research is to explore and understand the most prevalent factors that generate a huge impact on absenteeism of workers in lock industry in Northern part of India. Firstly, the researcher conducts a background to fully understand the concept of absenteeism in before proceeding to research work. Research objectives are then developed to enhance the reliability and validity of research and to provide a guideline to research problems.

The purpose of this research is to examine main reason of absenteeism issues associated with lock industry. A questionnaire is developed to explore find the reasons for absenteeism. The questionnaire is administered to a convenience sample of 28 Managers/Supervisors and 102 Workers. Data were analyzed using descriptive statistics, factor analysis and reliability analysis by using SPSS.

Key Words: Absenteeism, Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Bartlett's Test of Sphericity, Eigen Value, Cronbach's Alpha

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INTRODUCTION

Absenteeism is 'lack of physical presence when there is a expectation to be at work.' Absenteeism can firstly be defined in terms of causes, and secondly in terms of physical presence. In terms of causes, the most common theories proposed that absenteeism is largely a behavioral response to dissatisfaction with certain aspects of one's job.[1] Absenteeism can firstly be defined in terms of physical presence and secondly in terms of causes. Patton and Johns[1] define absenteeism as an individual's lack of physical presence at a given location and time when there is a social expectation for him or her to be there. Martochhio and Jimeno [2] define absenteeism as a single day of missed work. In terms of causes, the most common theories proposed that absenteeism is largely a behavioral response to dissatisfaction with certain aspects of one's job. A stream of literature focusing on the role of demographics as well as work- and non-work-related constraints in influencing absenteeism.[2] De Boer etal.[2] provide further definitions of absenteeism in terms of causes. His withdrawal theory, regards absenteeism as withdrawing from adverse working conditions. In this paper instead of viewing absenteeism in terms of physical presence, the researcher focused on the underlying reasons of absenteeism on its workplace, behavior and personality.

REVIEW OF LITERATURE

Global Scenario

Hoque & Islam[2] in their paper **"Contribution of some behavioral factors to absenteeism of manufacturing workers in Bangladesh."** studied the impact of some behavioral and social factors on absenteeism of manufacturing workers in Bangladesh. They also examined the association of the demographic variables of the workers on absenteeism. The sample of the study was selected by using random number table consisted of 400 workers from four textile and four jute mills situated at Dhaka and Khulna divisions of Bangladesh. Their study showed that, absenteeism has significant positive correlation with job stress and negative correlation with job satisfaction and mental health; and non-significant association was found between absenteeism and demographic variables, except for the variables of wage and experience.

Darr & Johns[1] in their paper **"Work strain, health, and absenteeism: A meta-analysis."** examined that work strain had been argued to be a significant cause of absenteeism in the popular and academic press. However, definitive evidence for any associations between absenteeism and strain was by then lacking. A theory that focused on meta-analysis of 275 effects from 153 studies had revealed

positive but small associations between absenteeism and work strain, psychological illness, and physical illness. The structural equation model had suggested that the strain-absence connection may be mediated by psychological and physical symptoms. Little support was received for the purported volitional distinction between absence frequency and time lost absence measures, based on illness. Among the moderators that were examined, common measurement, midterm and stable sources of variance, and publication year had received support.

Obasan Kehinde[1] in his paper **"Impact of Job Satisfaction on Absenteeism: A Correlative Study."** had spelt out an evaluation of the impact of job satisfaction on absenteeism in, a plastic manufacturing industry situated at Ibadan, Oyo State, Nigeria. Extrinsic sources of job satisfaction including Pay, work, promotion, supervision, co-workers, working conditions and fairness were considered in his study. The result revealed that there is a direct linkage between employee absenteeism and job satisfaction. It was discovered that the absenteeism of workers in a work place may be caused by a lot of factors which in most cases was related to the dissatisfaction of the employees. Further, the author recommended to employers for strategically designing, developing and implementing company-standard. Employee motivational policies relative to extrinsic sources as this invariably motivated and encouraged employees to be more present and punctual in their place of work and strategically vanished out employee absenteeism.

Langenhoff in his master thesis **"Employee Absenteeism: Construction of a Model for International Comparison of Influential Determinants."** highlighted a new insights into employee absenteeism, a model with a broad variety of determinants was constructed and tested for Europe as a whole and also according to individual countries. A dataset from the European Community Household Panel was used to test the model. This survey provided the necessary information and was constructed as such that it could be utilized for international comparisons. The designed model was based upon the effects of latent variables and because of the binary aspect of the dependent variable a probit analysis was conducted and established. Although not all determinants showed expected results, strong significance was found for the constructed model as a whole and the individual determinants. The results for the individual European countries were found to be ambiguous. These differences originated from individual country's characteristics and hence, the model is supposed to be adjusted for the individual countries according to distinct characteristics.[1]

Indian Scenario

Ahmad & Saiyadain[1] in their **paper "Factors Contributing to Absenteeism: Malaysia-India Comparison."** conducted a study to identify factors that contributed to absenteeism among Malaysian and Indian employees. Three clusters of factors dealing with individual, environment and work were examined. Data was collected from the blue-collar employees working in manufacturing sector. The final sample consisted of 241 employees from Malaysia (121 regular. 120 absentee) and 645 employees from India (312 regular, 333 absentee). Absenteeism was operationalised in terms of one or more unauthorized absence from work during a month over a year. The results showed that higher educational level and greater years of work experience led to greater absenteeism among Malaysian employees; a finding contrary to the Indian sample. Malaysian employees living farther away from their place of work and Indian employees living close to work were more absent. Drinking contributed to absenteeism for both samples. Risky and monotonous work, unhelpful supervisors and low job satisfaction, contributed in varying degrees to absenteeism for Malaysian and Indian employees.

Singh and Khanna[1] in their paper **"Effect and Impact of Employee Absenteeism and Personnel Constant Turnover in an Organization."** focused on the impact that the absenteeism and the constant turnover of personnel have in the organizations and the causes of this common situation. Also, the authors analyzed prevention programs and strategies like motivation, communication, career planning, retention programs, and training, to overcome the negative effects of absenteeism. The purpose of this research was to determine the reasons why employees skip their working schedules or change jobs continuously. The target population for this study consisted of respondents from three groups within the company, namely, Managers, Supervisors and Workers at C & S Electric Limited, Noida. A non probability convenient sample, consisting of 120 respondents, representing all three groups, was selected. The results were presented in tables, and a cross-tabular analysis was made by means of descriptive statistical analysis. This required an analysis of the Mean Scores and the Standard Deviation and Population Standard Deviation. In addition, an inferential statistical analysis was done by means of the one-way ANOVA (multivariate analysis) to determine whether there was a statistically significant difference between the mean scores of the three groups.

OBJECTIVES OF THE STUDY

To estimate the prevalence of absenteeism and to study the factors associated with absenteeism among workers in a lock industry, objective of this research paper is

To uncover the various indicators for the reasons behind absenteeism in the workplace and to explore which of these factors are the most responsible.

Research Methodology

For this study the following methodology was applied

Sample size of the study[1] 28 Managers + 102 Workers

Sampling Elements Managers/Supervisors and Workers (Blue Collar)

Sampling Method Convenience Sampling

Survey Period July 2015

Primary Data Scheduled Questionnaire.

Data Analysis Factor Analysis and Reliability Analysis.

Data Collection and Respondent Profile

The data collection can be described as an iterative process. It consisted of three phases, as described. The first data collection phase included meeting attendance as to frame the area of concern. Analysis of meeting notes generated five areas of significant interest namely, expansion methods, organization, conversion, demarcation, and construction. The data collection of the second phase mainly includes scheduled interviews. The third phase was confirmatory in character. After completing the first two phases, process charts through SPSS software were developed. Data collection was done by schedule questionnaires from managers/supervisors and workers in the lock industry.

Design and Development of the Research Instrument

The questionnaire for this study was constructed through an exhaustive literature review of empirical research work and through pilot study. Scheduled Questionnaire has been used as a medium for data collection as it able to reach out the element of transparency. The questionnaire consist of 40 questions. The schedule design is specifically made to identify the reasons of worker's absenteeism. This would give their perception of the factors leading to worker's absenteeism. The framing of questionnaire based on "why a worker might be absent from work"?

The workers has to rate each factor for their absence at work on a 5-point Likert's Scale. Also the management has to rate each factor for worker's absence. The management and the workers could add other factors if necessary. The questionnaire consisted in the main of self-rated, non-comparative single-item rating scales used to assess respondents' level of agreement or disagreement with statements

relating to the causes of absenteeism in the organization, to their satisfaction with standard features and to the difficulty of choice between many alternative models. Questionnaire is designed on the bases of previous literature and study related to labour absenteeism. Hence in this part of the paper the perception of workers and management for the main determinant of absenteeism becomes clear.

Data Analysis and Interpretation

In this section an attempt has been made to present the perception of workers and managers/supervisors on certain possible reason behind the absenteeism of lock industry. In all forty reasons are analyzed and presented under different headings as presented below Managers/Supervisors were asked to rate a list of reasons they felt (believed) workers are absent. The rating of the 40 reasons the managers/supervisors reported for workers' absenteeism for actually missing work are arranged from strongest to weakest reason. The 5 strongest reasons for absenteeism as reported by the mangers/supervisors were (1) Fatigueness., (2) Lack of recreational facility in and around the resident area., (3) Stressful job., (4) Engagement in marketing activities on days following the payment of the weekly wages to them., (5) Affectionate towards attending ceremonies like wedding, birth-days and funerals.

Workers were asked to rate a list of reasons they felt for being absent. The rating of the 40 reasons the workers reported for workers' absenteeism for actually missing work are arranged from strongest to weakest reason. The 5 strongest reasons for absenteeism as reported by the mangers/supervisors were (1) Working elsewhere for extra income., (2) Dissatisfied with Payment Policy of the organization., (3) Stressful job., (4) Absence of requisite leave arrangement., (5) Insufficient transport facility.

Table No. 1:Descriptive Statistics of Perception of Managers and Opinion of Workers on Workers' Absenteeism

Causes of Absenteeism	N Supervisor(Workers)	Mean Supervisor(Workers)		Std. Deviation Supervisor (Workers)
	Statistic	Statistic	Std. Error	Statistic
Stressful job	28(102)	**4.357**(**4.274**)	0.092(0.056)	0.487(0.565)
Active participation in religious activities	28(102)	4.000(3.490)	0.000(0.083)	0.000(0.841)
Affectionate towards attending ceremonies like wedding, birth-days and funerals	28(102)	**4.267**(3.931)	0.092(0.067)	0.487(0.678)
Working of Trade Unions	28(102)	3.392(3.127)	0.093(0.064)	0.497(0.655)
Absence of requisite leave arrangement	28(102)	4.193(**4.264**)	0.092(0.050)	0.487(0.505)
Fatigueness	28(102)	**4.564**(4.107)	0.089(0.055)	0.475(0.561)
Engagement in marketing activities on days following the payment of the weekly wages to them.	28(102)	**4.321**(4.156)	0.089(0.061)	0.475(0.625)
Faulty Selection	28(102)	4.107(3.950)	0.187(0.110)	0.994(1.111)
Wrong placement	28(102)	3.857(3.968)	0.122(0.069)	0.650(0.702)
Inadequate training	28(102)	3.678(3.637)	0.206(0.095)	1.090(0.962)
Dissatisfied with Payment Policy of the organization	28(102)	4.096(**4.303**)	0.092(0.058)	0.487(0.593)
Poor scheduling of work	28(102)	3.714(3.617)	0.086(0.073)	0.460(0.745)
Frequent Overtime	28(102)	3.571(3.725)	0.166(0.068)	0.878(0.691)
Undesirable Conditions at Working Place	28(102)	3.285(3.098)	0.191(0.085)	1.013(0.861)
Insufficient transport facility	28(102)	4.142(**4.258**)	0.067(0.047)	0.356(0.483)
Lack of recreational facility in and around the resident area	28(102)	**4.368**(4.186)	0.083(0.043)	0.440(0.438)
Repetitive lengthy shifts	28(102)	4.035(4.143)	0.108(0.073)	0.576(0.745)
Temporary or sporadic breakdown of machine	28(102)	3.428(3.519)	0.173(0.084)	0.920(0.852)
Working elsewhere for extra income	28(102)	4.250(**4.433**)	0.083(0.047)	0.440(0.483)

Disagreeable task and monotony	28(102)	3.832(3.803)	0.067(0.039)	0.356(0.398)
Long working hours	28(102)	3.709(3.627)	0.169(0.091)	0.896(0.921)
Lack of team work and coordination	28(102)	3.940(3.539)	0.173(0.086)	0.920(0.875)
Insufficient rest period	28(102)	3.857(3.666)	0.160(0.088)	0.848(0.893)
Work is risky and dangerous	28(102)	3.607(3.627)	0.207(0.097)	1.100(0.984)
Living far from native place	28(102)	3.178(2.666)	0.252(0.120)	1.334(1.221)
Living without family members	28(102)	3.392(2.715)	0.258(0.127)	1.370(1.292)
Frequent visit at native place or home (village)	28(102)	3.464(2.833)	0.202(0.106)	1.070(1.072)
Housing problem	28(102)	3.376(3.196)	0.258(0.136)	1.370(1.379)
Improper and Unrealistic Personal Policies	28(102)	2.285(2.156)	0.245(0.118)	1.301(1.191)
Reluctance to deal with Products at times as this activity is perceived by many as an Inferior Employment	28(102)	2.571(2.607)	0.238(0.129)	1.259(1.306)
Inertia for profession which neither helps to earn satisfactory wages nor the social recognition/respect.	28(102)	2.892(2.803)	0.214(0.124)	1.133(1.258)
Callousness and lack of economic consciousness and attitude towards saving for future.	28(102)	2.464(2.421)	0.221(0.111)	1.170(1.129)
Old Age	28(102)	2.392(2.284)	0.187(0.095)	0.994(0.968)
Frequent friction with supervisor	28(102)	2.321(2.294)	0.206(0.107)	1.090(1.086)
Accidents and injury	28(102)	3.500(3.539)	0.174(0.085)	0.922(0.863)
Deteriorating health condition	28(102)	3.107(3.068)	0.283(0.141)	1.499(1.429)
Seasonal / viral illness	28(102)	3.071(3.458)	0.276(0.139)	1.463(1.405)
Chronic disease	28(102)	3.049(2.990)	0.223(0.116)	1.184(1.181)
Poor Supervision	28(102)	2.214(2.196)	0.237(0.123)	1.257(1.243)
Bad habits like alcoholism and smoking	28(102)	2.642(2.450)	0.138(0.093)	0.731(0.940)
Valid N (listwise)	28(102)			

Factor Analysis

Factor analysis is used to find factors among observed variables. In other words, if your data contains many variables, then factor analysis helps to reduce the number of variables. Factor analysis groups variables with similar characteristics together. With factor analysis one can produce a small number of factors from a large number of variables which is capable of explaining the observed variance in the larger number of variables. The reduced factors can also be used for further analysis. There are three stages in factor analysis:

Firstly, a correlation matrix is generated for all the variables. A correlation matrix is a rectangular array of the correlation coefficients of the variables with each other.

Secondly, factors are extracted from the correlation matrix based on the correlation coefficients of the variables. Lastly, the factors are rotated in order to maximize the relationship between the variables and some of the factors.

After going through literature review, it builds a very comprehensive list of decision elements conducting field study, collects data from the respondents especially if the researcher looks at Human Resource research, HRD managers always wants to find about the causes of absenteeism of workers and they test the workers perception on many elements, which they believe are relevant. For this purpose an attempt has been made by the researcher to develop an instrument for causes of absenteeism in lock units so as the HRD personnel mitigate the intensity of absence spells and take various controlling measures for this menace. To start with the first step is to find the adequacy of sampling data. For this purpose, a KMO test has been conducted through SPSS. KMO test is an index, which defines the measure of sampling adequacy. Ideally for any factor analysis the number of responses should be 4 to 5 times the number of variables. Then only factor analysis is a good analysis. In addition, KMO measures give the researcher an answer whether factor analysis is a good analysis. Interpretation[1] of the KMO are the degree of common variance among the eighteen variables is “middling” bordering on “meritorious”. If a factor analysis is conducted, the factors extracted will account for fare amount of variance but not a substantial amount.

As far as the association amongst the identity variables is concerned, it is meaningful then only when each of them are correlated amongst themselves. For this Bartlett’s test of Sphericity is undertaken. This test calculates the determinate of the matrix of the sums of products and cross-products (S) from which the inter-correlation matrix is derived. The determinant of the matrix S is converted to a chi-square statistic and tested for significance.

Table No. 2: Measurement of KMO Value

KMO Value	Degree of Common Variance
0.90 to 1.00	Marvelous
0.80 to 0.89	Meritorious
0.70 to 0.79	Middling
0.60 to 0.69	Mediocre
0.50 to 0.59	Miserable
0.00 to 0.49	Don't Factor

Table No. 3: Results of KMO Value and Sphericity Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.782
Bartlett's Test of Sphericity	Approx. Chi-Square	5283.168
	df	780
	Sig.	0.000

The null hypothesis is that the inter-correlation matrix comes from a population in which the variables are non-collinear (i.e. an identity matrix) or in simple words none of the variables in this research are correlated.

So if the correlation matrix is made where all the variables are put into columns as well as rows, it will be an identity matrix where each variable will only have 100% correlation variance with itself i.e., on all the diagonals while it will have 'zero' correlation with all other variables. When Bartlett's Test of Sphericity gives answer to the researcher, the next step is to look at its significant value that is .000 which is less than .05, which means at 95% confidence level the null hypothesis of this test is not accepted and its alternative hypothesis is accepted.

An Initial Solution Using the Principal Components Method

In the initial solution, each variable is standardized to have a mean of 0.0 and a standard deviation of ±1.0.

Thus, the variance of each variable = 1.0 and the total variance to be explained is 40, i.e. 40 variables, each with a variance = 1.0, since a single variable can account for 1.0 unit of variance. A useful factor must account for more than 1.0 unit of variance, or have an eigenvalue $\lambda > 1.0$, otherwise

the factor extracted explains no more variance than a single variable. As the goal of factor analysis is to explain multiple variables by a lesser number of factors.

The Results of the Initial Solution

40 variables (components) were extracted, the same as the number of variables factored.

Factor I : The 1st factor has an eigenvalue = 11.955. Since this is greater than 1.0, it explains more variance than a single variable. The percent a variance explained as, (11.955/40 units of variable) (100) = 29.88%

Factor II : The 2nd factor has an eigenvalue = 3.720. Since this is greater than 1.0, it explains more variance than a single variable. The percent a variance explained as, (3.720/40 units of variable) (100) = 9.31%

Factor III : The 3rd factor has an eigenvalue = 2.948. Since this is greater than 1.0, it explains more variance than a single variable. The percent a variance explained as, (2.948/40 units of variable) (100) = 7.37%

Factor IV : The 4th factor has an eigenvalue = 2.577. Since this is greater than 1.0, it explains more variance than a single variable. The percent a variance explained as, (2.577/40 units of variable) (100) = 6.44%

Factor V : The 5th factor has an eigenvalue = 2.324. Since this is greater than 1.0, it explains more variance than a single variable. The percent a variance explained as, (2.324/40 units of variable) (100) = 5.81%

Factor VI : The 6th factor has an eigenvalue = 1.990. Since this is greater than 1.0, it explains more variance than a single variable.

The percent a variance explained as, (1.990/40 units of variable) (100) = 4.97%

Factor VII : The 7th factor has an eigenvalue = 1.681. Since this is greater than 1.0, it explains more variance than a single variable, in fact 1.681 times as much.

The percent a variance explained as, (1.681/40 units of variable) (100) = 4.20%

Factor VIII : The 8th factor has an eigenvalue = 1.419. Since this is greater than 1.0, it explains more variance than a single variable, in fact 1.419 times as much.

The percent a variance explained as, (1.419/40 units of variable) (100) = 3.54%

Factor IX : The 9th factor has an eigenvalue = 1.297. Since this is greater than 1.0, it explains more variance than a single variable, in fact 1.297 times as much.

The percent a variance explained as, (1.297/40 units of variable) (100) = 3.24%

Factor X : The 10th and the last factor has an eigenvalue = 1.187. Since this is greater than 1.0, it explains more variance than a single variable, in fact 1.187 times as much.

The percent a variance explained as, (1.187/40 units of variable) (100) = 2.96%

Remaining factors: Factors 11 through 40 have eigenvalues less that 1, and therefore explain less variance that a single variable.

The sum of the eigenvalues associated with each factor (component) sums to 40.

(11.955 + 3.720 + 2.948 + 2.577 + … + .004) = 40

The cumulative % of variance explained by the first six factors is 77.744%

In other words, 77.74% of the common variance shared by the 40 variables can be accounted for by the 10 factors. This is reflective of the KMO of 0.782, a "middling" to "marvelous" % of variance. This initial solution suggests that the final solution should extract not more than 10 factors.

Table No.4: 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	11.955	29.886	29.886	11.955	29.886	29.886	11.631	29.079	29.079
2	3.720	9.300	39.186	3.720	9.300	39.186	2.925	7.314	36.392
3	2.948	7.371	46.557	2.948	7.371	46.557	2.826	7.065	43.457
4	2.577	6.443	53.000	2.577	6.443	53.000	2.486	6.215	49.672
5	2.324	5.810	58.811	2.324	5.810	58.811	2.444	6.109	55.782
6	1.990	4.974	63.784	1.990	4.974	63.784	2.126	5.315	61.097
7	1.681	4.202	67.987	1.681	4.202	67.987	2.059	5.148	66.245
8	1.419	3.547	71.533	1.419	3.547	71.533	1.657	4.141	70.387
9	1.297	3.243	74.776	1.297	3.243	74.776	1.498	3.746	74.132
10	1.187	2.968	77.744	1.187	2.968	77.744	1.445	3.612	**77.744**
11	.984	2.459	80.203						
12	.861	2.153	82.356						
13	.766	1.914	84.270						
14	.627	1.568	85.838						
15	.599	1.499	87.337						
16	.557	1.393	88.730						
17	.544	1.360	90.090						
18	.453	1.132	91.222						
19	.399	.998	92.220						
20	.385	.963	93.183						
21	.364	.911	94.093						
22	.325	.812	94.905						
23	.287	.718	95.623						
24	.249	.622	96.245						
25	.237	.593	96.838						

26	.203	.508	97.346						
27	.182	.456	97.802						
28	.164	.411	98.212						
29	.109	.272	98.484						
30	.107	.269	98.753						
31	.107	.267	99.020						
32	.094	.235	99.255						
33	.072	.180	99.435						
34	.059	.148	99.583						
35	.058	.144	99.727						
36	.043	.108	99.835						
37	.035	.087	99.922						
38	.017	.043	99.965						
39	.010	.026	99.991						
40	.004	.009	100.000						

Extraction Method: Principal Component Analysis.

Cattell's Scree Plot

Another way to determine the number of factors to extract in the final solution is Cattell's scree plot. This is a plot of the eigenvalues associated with each of the factors extracted, against each factor.

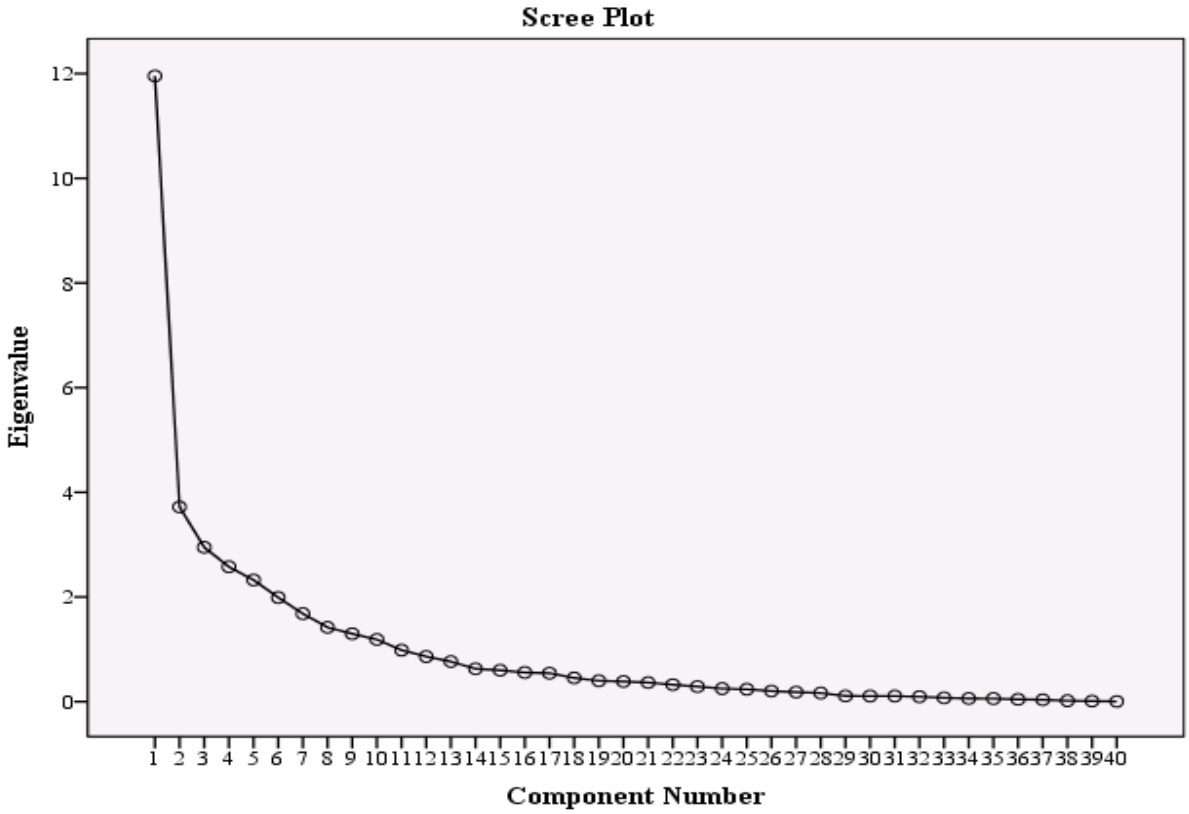

Figure No.1: Scree Plot

At the point that the plot begins to level off, the additional factors explain less variance than a single variable.

FACTOR LOADING

(a)Component Matrix

The component matrix indicates the correlation of each variable with each factor. Number of components means how many factors has been extracted. Original Components were 40 which is written on the first column, and the component which has been created are ten.

Table No. 5: Component Matrix[a]

	Components									
	1	2	3	4	5	6	7	8	9	10
C1	.000	.185	.314	.068	.208	-.356	.201	-.402	.025	.395
C2	.088	.230	.701	.028	.502	-.043	-.021	-.037	-.082	.000
C3	-.030	.110	.544	.015	.504	-.058	-.270	.268	-.021	-.128
C4	.124	.057	.597	-.165	.304	.003	-.163	.034	.358	.104
C5	.144	-.028	.180	-.180	.097	.204	-.107	.460	.642	-.121
C6	.000	.086	.198	.365	.339	-.344	-.066	-.141	.000	.321
C7	.171	.266	.528	-.082	.270	.064	.147	-.251	-.207	-.267
C8	.879	.168	-.072	.053	.006	-.142	-.008	.027	-.034	-.016
C9	.820	.050	-.007	.021	-.150	-.216	-.010	-.093	.136	-.132
C10	.914	-.006	.074	-.050	-.033	.027	-.023	.004	.029	.036
C11	.281	.164	-.463	.086	.272	-.551	.091	.177	.003	-.130
C12	.926	.092	-.040	-.022	.068	.035	-.041	.044	-.068	-.028
C13	.753	-.050	.133	.007	-.139	.268	-.057	-.033	.077	.152
C14	.782	-.052	.044	.071	-.009	.392	.013	-.030	-.003	-.051
C15	.271	-.021	.001	-.121	.155	.433	.135	.346	-.194	.549
C16	.369	.150	-.202	.037	.222	-.187	.014	.438	-.268	.336
C17	.825	.033	.106	.023	-.202	-.105	-.059	-.232	.017	-.031
C18	.980	.039	-.012	.007	-.054	.003	.001	-.015	.029	.026
C19	.353	.206	-.276	-.024	.200	-.645	-.039	.211	.036	-.279

C20	.933	.088	.012	.009	-.025	-.005	.065	-.069	-.071	.014
C21	.891	.053	-.035	.087	.040	.024	.012	-.041	-.170	-.055
C22	.970	.041	-.010	.019	-.068	.027	.002	-.007	.047	.028
C23	.922	.065	-.013	.085	-.010	.057	.062	.028	-.042	-.032
C24	.956	-.003	-.031	.075	-.069	.089	-.004	.007	.024	-.049
C25	.062	.321	-.465	.054	.391	.286	-.099	-.318	.133	-.086
C26	-.079	.311	-.440	-.115	.485	.313	.149	-.161	-.032	-.060
C27	-.019	.219	-.485	-.056	.463	.335	-.196	.094	-.173	-.074
C28	.042	.243	-.347	.062	.514	.120	-.037	-.140	.271	.036
C29	.011	.390	.007	-.535	-.146	-.123	-.195	.205	.168	.045
C30	-.109	.542	.089	-.598	-.109	-.028	-.059	-.009	-.269	-.058
C31	-.063	.606	-.016	-.656	-.116	-.056	.040	-.162	-.034	.083
C32	-.048	.592	-.034	-.621	-.235	-.036	.185	-.032	.089	.107
C33	-.163	.419	.288	.279	-.089	.117	.230	.385	-.360	-.214
C34	-.143	.559	-.048	.361	-.111	.071	.478	.014	.309	.111
C35	.961	-.004	.046	-.034	-.072	.025	-.018	.020	.050	.010
C36	-.176	.567	.086	.352	-.271	.116	-.587	.013	-.132	-.027
C37	-.207	.733	.044	.442	-.260	.058	-.230	-.020	.004	.052
C38	-.231	.644	-.047	.469	-.229	.060	-.262	-.021	.162	.044
C39	-.113	.387	.100	.281	-.057	.053	.726	.198	.135	-.109
C40	-.023	-.018	.308	-.073	.068	.254	.184	-.110	-.059	-.367

Extraction Method: Principal Component Analysis.

a. 10 components extracted.

(b)Communalities

The total proportion of the variance in explained by the six factors is simply the sum of its squared factor loadings. For example,

Stressful Job (C1)

Correlates 0.000 with Factor 1st

Correlates 0.185 with Factor 2nd

Correlates 0.314 with Factor 3rd

Correlates 0.068 with Factor 4th

Correlates 0.208 with Factor 5th

Correlates -0.356 with Factor 6th

Correlates 0.201 with Factor 7th

Correlates -0.402 with Factor 8th

Correlates 0.025 with Factor 9th

Correlates 0.395 with Factor 10th

The total proportion of the variance in sentence explained by the six factors is simply the sum of its squared factor loadings.

[0.000 + 0.185 +0.314 + 0.068 +0.208 + (-0.356) + 0.201 + (-0.402) + 0.025+ 0.395] = 0.665

This is called the communality of the variable. The communalities of the 40 variables are as follows: (cf. column headed Extraction)

Table No. 6: Communalities

	Initial	Extraction
C1	1.000	.665
C2	1.000	.815
C3	1.000	.728
C4	1.000	.661
C5	1.000	.787
C6	1.000	.540
C7	1.000	.662
C8	1.000	.832
C9	1.000	.790
C10	1.000	.848
C11	1.000	.761
C12	1.000	.884
C13	1.000	.711

C14	1.000	.778
C15	1.000	.777
C16	1.000	.662
C17	1.000	.804
C18	1.000	.966
C19	1.000	.825
C20	1.000	.892
C21	1.000	.841
C22	1.000	.952
C23	1.000	.873
C24	1.000	.936
C25	1.000	.697
C26	1.000	.697
C27	1.000	.696
C28	1.000	.560
C29	1.000	.585
C30	1.000	.764
C31	1.000	.854
C32	1.000	.851
C33	1.000	.761
C34	1.000	.820
C35	1.000	.935
C36	1.000	.934
C37	1.000	.904
C38	1.000	.844
C39	1.000	.854
C40	1.000	.355

Extraction Method: Principal Component Analysis.

As is evident from the Table No. 5, the proportion of variance in each variable accounted for by the ten factors is not the same. In Table No. 6, Component Matrix in itself does not very clearly highlight which variable are going into which factor. So the final answer or the identification of the factors clearly comes from rotated component matrix.

Rotated Component Matrix

The idea of rotation is to reduce the number factors on which the variables under investigation have high loadings. Rotation does not actually change anything but makes the interpretation of the analysis easier.

Table No. 7: Rotated Component Matrix[a]

	Components									
	1	2	3	4	5	6	7	8	9	10
Stressful job (C1)	.000	.104	-.041	-.044	.166	-.010	.118	**.770**	-.118	-.042
Active participation in religious activities (C2)	.062	.014	.038	-.011	**.805**	-.034	.013	.361	.149	.084
Affectionate towards attending ceremonies like wedding, birth-days and funerals (C3)	-.091	-.079	.102	-.025	**.710**	.148	-.169	.086	.338	.158
Working of Trade Unions (C4)	.096	.089	-.041	-.075	.446	-.133	-.107	.313	.557	-.015
Absence of requisite leave arrangement (C5)	.109	.024	-.068	.005	.061	-.009	.073	-.228	**.842**	.016
Fatigueness (C6)	-.030	-.243	.156	.016	.170	.178	-.022	**.619**	-.017	.107
Engagement in marketing activities on days following the payment of the weekly wages to them. (C7)	.191	.156	-.038	.042	**.715**	-.109	.114	.117	-.139	-.171
Faulty Selection (C8)	**.864**	.040	.027	.033	.011	.270	.008	.055	-.020	.074
Wrong placement (C9)	**.823**	.032	-.023	-.102	-.061	.228	-.007	.056	.054	-.198
Inadequate training (C10)	**.902**	.018	-.097	-.042	.038	.030	-.069	.025	.092	.075
Contented with Payment Policy of the organization (C11)	.197	-.015	-.071	.210	-.139	**.796**	.082	.080	-.070	.048
Poor scheduling of work (C12)	**.907**	.022	-.047	.095	.082	.141	-.064	-.041	.014	.133
Frequent Overtime (C13)	**.777**	-.035	-.009	-.051	-.028	-.267	-.053	.002	.135	.105

Undesirable Conditions at Working Place (C14)	**.803**	-.140	-.053	.123	.079	-.233	.012	-.167	.050	.072
Insufficient transport facility (C15)	.236	.039	-.153	.106	-.019	-.315	.056	-.008	.074	**.760**
Lack of recreational facility in and around the resident area (C16)	.288	.026	.010	.049	-.036	.390	.002	.082	-.049	**.643**
Repetitive lengthy shifts (C17)	**.852**	.041	.020	-.138	-.010	.019	-.086	.122	-.058	-.177
Temporary or sporadic breakdown of machine (C18)	**.974**	.004	-.061	-.001	-.023	.084	-.024	.027	.047	.061
Working elsewhere for extra income (C19)	.271	.100	-.020	.052	.009	**.855**	-.017	.026	.033	-.073
Disagreeable task and monotony (C20)	**.931**	.033	-.067	.016	.048	.078	.017	.054	-.067	.063
Long working hours (C21)	**.883**	-.069	-.034	.068	.095	.116	-.032	-.023	-.137	.091
Lack of team work and coordination (C22)	**.968**	-.004	-.048	-.001	-.033	.064	-.010	.016	.063	.059
Insufficient rest period (C23)	**.918**	-.058	-.038	.035	.047	.089	.058	-.035	-.012	.096
Work is risky and dangerous (C24)	**.957**	-.084	-.038	.019	-.018	.046	-.005	-.072	.042	.038
Living far from native place (C25)	.082	.025	.135	**.807**	-.063	.003	-.004	.018	-.037	-.120
Living without family members (C26)	-.088	.138	-.084	**.787**	.044	.014	.133	-.061	-.120	.078
Frequent visit at native place or home (village) (C27)	-.051	.019	.085	**.707**	.043	.112	-.151	-.262	-.068	.275
Housing problem (C28)	.019	-.037	.026	**.693**	-.027	.130	.045	.169	.172	-.003
Improper and Unrealistic Personal Policies (C29)	.006	.663	.108	-.053	-.044	.143	-.106	-.072	.299	.056
Reluctance to deal with Products at times as this activity is perceived by many as an Inferior Employment (C30)	-.084	**.808**	.108	.012	.224	.022	-.063	-.113	-.149	.053
Inertia for profession which neither helps to earn satisfactory wages nor the social recognition/respect. (C31)	-.029	**.906**	.048	.130	.034	-.018	.030	.077	-.056	-.038

Callousness and lack of economic consciousness and attitude towards saving for future. (C32)	-.009	**.891**	.018	.041	-.081	-.025	.214	.023	.043	-.008
Old Age (C33)	-.126	.019	.359	-.190	.430	.061	.473	-.272	-.189	.241
Frequent friction with supervisor (C34)	-.067	.074	.317	.150	-.123	-.023	**.792**	.196	.065	-.030
Accidents and injury (C35)	**.952**	.010	-.085	-.052	.004	.049	-.050	-.008	.100	.057
Deteriorating health condition (C36)	-.076	.088	**.940**	-.004	.086	-.055	-.130	-.072	-.055	-.006
Seasonal / viral illness (C37)	-.095	.132	**.890**	.057	.014	-.017	.261	.092	-.066	-.023
Chronic disease (C38)	-.127	.046	**.853**	.120	-.095	.004	.238	.092	.052	-.085
Poor Supervision (C39)	-.073	.014	.036	-.018	.110	.052	**.912**	-.012	-.008	.019
Bad habits like alcoholism and smoking (C40)	.005	-.004	-.141	.008	.411	-.223	.146	-.207	-.037	-.226

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Table No. 7, shows the correlation between the Variable and the Factor.

Factor 1

Variable No. C8 (0.864), C9 (0.823), C10 (0.902), C12 (0.907), C13 (0.777), C14 (0.803), C17 (0.852), C18 (0.974), C20 (0.931), C21 (0.883), C22 (0.968), C23 (0.918), C24 (0.957) and C35 (0.952) highlight high values of correlation between the variable and the factor. So the researcher finds these fourteen variables are closely matching Factor No. 1 from the workers and managers perspective. So the New Naming Factor is ***Job Dissatisfaction.*** Similarly,

Factor 2

C30 (0.808), C31 (0.906) and C32 (0.891)

Naming Factor ***Attitudinal Factors***

Factor 3

C36 (0.940), C37 (0.890) and C38 (0.853)

Naming Factor ***Health Deterioration***

Factor 4

C25 (0.807), C26 (0.787), C27 (0.707) and C28 (0.693)

Naming Factor ***Family Responsibilities***

Factor 5

C2 (0.805), C3 (0.710) and C7 (0.715)

Naming Factor ***Social Obligations***

Factor 6

C11 (0.796) and C19 (0.855)

Naming Factor ***Wage Issues***

Factor 7

C34 (0.792) and C39 (0.912)

Naming Factor ***Lack of Coordination with the Supervisor***

Factor 8

C1 (0.770) and C6 (0.619)

Naming Factor ***Burnout***

Factor 9

C5 (0.842)

Naming Factor ***Inadequate Leave Arrangements***

Factor 10

C15 (0.760) and C16 (0.643)

Naming Factor ***Improper Welfare Facilities***

After factor analysis the researcher will go for reliability analysis. Now the researcher already has 10 groups of variables theoretically. Check reliability of all these groups one by one through SPSS.

Reliability Analysis

According to Nunally[1] reliability is operationalized as internal consistency which is a degree of inter-correlations among the scale (Construct/Hypothesis). Reliability analysis allows to study the properties of measurement scales and the items that compose the scales. The Reliability Analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale. Intra class correlation coefficients can be used to compute inter-rater reliability estimates. SPSS provides a measurement of internal consistency or reliability of the test items which is called Cronbach's Alpha. The higher the correlation among the variables and the greater the alpha will be tested. According to Sekaran[1], Cronbach's Alpha Technique is a common reliability coefficient that shows how well the items in a set are positively correlated to one another. If the Cronbach's Coefficient value is 0.6 or more, it indicates high level of reliability and also signifies satisfactory internal consistency and reliability. However, Nunally[1] recommended, Alpha with a value more than 0.7 is considered adequate for such exploratory work.

Reliability Analysis for all 10 extracted factors

Table No. 10: Case Processing Summary

		N	%
Cases	Valid	130 (28 Managers/Supervisors and 102 Workers)	100.0
	Excluded[a]	0	0.0
	Total	130	100.0

a. Listwise deletion based on all variables in the procedure.

Table No. 11: Reliability Statistics

Overall Cronbach's Alpha	N of Items
0.842	**36** (From 10 Factors Explored)

Table No. 12: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C8 [F1]	120.4154	159.190	.715	.826
C9 [F1]	120.3615	169.612	.592	.833
C10 [F1]	120.7077	163.712	.641	.829
C12 [F1]	120.7769	164.733	.735	.829
C13 [F1]	120.5538	170.931	.520	.835
C14 [F1]	121.2462	167.908	.560	.833
C17 [F1]	120.1308	168.719	.575	.833
C18 [F1]	120.8231	163.728	.732	.828
C20 [F1]	120.5308	172.623	.733	.835
C21 [F1]	120.7692	163.264	.675	.829
C22 [F1]	120.8077	163.552	.724	.828
C23 [F1]	120.6923	163.331	.703	.828
C24 [F1]	120.7231	162.357	.691	.828
C35 [F1]	120.8077	164.653	.681	.829
C30 [F2]	121.7308	174.772	.130	.846
C31 [F2]	121.5231	172.236	.215	.843
C32 [F2]	121.9000	173.471	.206	.842
C36 [F3]	121.2385	174.710	.108	.848
C37 [F3]	121.2462	171.381	.203	.844
C38 [F3]	121.3000	174.925	.144	.845
C25 [F4]	121.7077	171.309	.262	.841
C26 [F4]	121.6769	174.360	.148	.845
C27 [F4]	121.5923	175.654	.144	.844
C28 [F4]	121.1231	171.613	.203	.844
C2 [F5]	120.8538	175.893	.184	.842

C3	[F5]	120.4846	179.554	.038	.845
C7	[F5]	120.1308	176.332	.253	.840
C11	[F6]	120.0462	176.463	.279	.840
C19	[F6]	120.0538	176.563	.338	.839
C34	[F7]	122.0154	174.852	.167	.843
C39	[F7]	122.1231	176.915	.071	.848
C1	[F8]	120.0077	179.201	.091	.843
C6	[F8]	120.2231	179.772	.047	.844
C5	[F9]	120.0231	179.387	.090	.843
C15	[F10]	120.2615	177.714	.197	.841
C16	[F10]	120.1615	176.307	.335	.839

SUMMARY OF RESULTS

Factor Analysis: 40 variables were reduced to 10 factors. These ten factors account for 77.74% of the covariance among the variables. The new factors appear are Job Dissatisfaction, Attitudinal Factors, Health Deterioration, Family Responsibilities, Social Obligations, Wage Issues, Lack of Coordination with the Supervisor, Burnout, Inadequate Leave Arrangements and Improper Welfare Facilities. The variable which has got a high loading with one factor it has that loading only with that factor and it should not appear in other factor, because factors within themselves should be consistent but with each other it is as different as possible.

Reliability Analysis: After factor analysis the researcher check the reliability of all factors explored through factor analysis methodology. This enables a more accurate reliability of explored variables. All analysis of data show that questionnaire is effective and it helps to the finding reasons of absenteeism.

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