

Exploring job satisfaction factors and their impact: A principal component analysis approach

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Abstract

Introduction: Job satisfaction or employee satisfaction is a measure of knowing how happy workers are with their job as well as working environment. It is certain that there are many factors affecting organizational effectiveness & performance; and one of them is employee satisfaction.

Objectives: The main aim of the paper is to find out various factors which affect job satisfaction of employees. Along with this, paper is also aiming to find out the influence of various demographic factors of employees on their job satisfaction.

Methods: The primary as well as secondary data have been used to attain the objectives of this paper. Data collected from various sources have been analysed with the help of computer software "Statistical Package for Social Sciences (SPSS)" and other statistical tools like Factor analysis, t-test and ANOVA. The technique used for extracting factors is called factor analysis and the extraction method is principal component analysis.

Results: The study highlighted key factors that impact employee job satisfaction, such as promotion and career development, pay and compensation, management policies, relationships with supervisors and peers, and the working environment and conditions.

In addition, study also revealed that variations in age, gender, educational qualifications, and marital status do not significantly influence employees' job satisfaction.

Conclusions: This study demonstrates the importance of focusing on job-related elements to improve overall satisfaction in the workplace. Specifically, employees' perceptions of career growth opportunities, fair compensation, supportive management practices, positive interpersonal relationships at work, and a healthy working environment all contribute to their job satisfaction levels. For practitioners and organizational leaders, the study provides valuable insights into where to focus efforts in improving employee satisfaction. By addressing the identified factors, organizations can foster a more engaged, motivated, and satisfied workforce.

Keywords: Job satisfaction, Factor analysis, Principal component analysis.

1. Introduction

According to Hoppock (1935) job satisfaction is defined as any combination of environmental, psychological and physiological circumstances that make a person to say that he is satisfied with his job. Starcevich (1972) have recognized few job-related factors such as growth on the job, feelings of achievement, challenging assignments, use of the best abilities and recognition. He also ranked them as the main factors for both job satisfaction and job dissatisfaction in spite of the respondents' occupational level. Centers and Cantril (1946) in

their studies related to job satisfaction, and marital status of employees found that married workers tend to like their jobs more than unmarried workers. Inflow (1951) found that employees are dissatisfied in the early period of their service other than this he also found that first two years of service has the most depressing influence on job satisfaction level of employees. Gannon and Hendrickson (1967) in their study of the career orientation, and job satisfaction of wives, who were employed in retailing businesses, women were found more satisfied with their jobs when job

involvement was high. Irene and Albert (1989) reported that gender is not significantly responsible for differences in job satisfaction levels of employees, whereas age, occupation, and length of service have a significant impact as some satisfaction measures. Thomas and Sasikumar (2002) determined factors which are important in deciding job satisfaction of managers in co-operative sector; they are job security, opportunity to use information and ability, opportunity to participate in decision-making connected with job, variety in job and challenge in job. Judge et al. (2008) indicated that the traits from all three taxonomies generally were significantly related to job satisfaction, even when the traits and job satisfaction was measured with independent sources. However, once all 3 typologies were examined at the same time, the core self-evaluation typology was the only typology that was significantly related to job satisfaction.

2. Objectives

Objective 1: The first objective of the paper is to identify various factors which can affect job satisfaction for employees.

Objective 2: The second and last objective of the paper is to find out the influence of various demographic factors like age, gender, marital status and work experience on the satisfaction level of employees.

3. Methods

3.1 Research Hypothesis

To attain first objective statistical technique Exploratory Factor Analysis is used. The second objective needed hypotheses formulation.

Ho1: There is no significant influence of different demographic characteristics of employees on their job satisfaction.

Sub Hypothesis

- **Ho1.1** There is no significant influence of age of employees on their job satisfaction.
- **Ho1.2** There is no significant influence of gender of employees on their job satisfaction.
- **Ho1.3** There is no significant influence of marital status of employees on their job satisfaction.
- **Ho1.4** There is no significant influence of service experience of employees on their job satisfaction.

3.2 Research Design

The nature of research of this study is both exploratory and descriptive.

Population: All the employees of private sector life insurance companies.

Sampling Frame: Employees of top five private sector insurance companies in Varanasi, Gorakhpur and Allahabad, Eastern Uttar Pradesh, India.

Selected Life Insurance Companies:

1. ICICI Prudential Life Insurance Company Limited
2. HDFC Standard Life Insurance Company Limited
3. SBI Life Insurance Company Limited
4. MAX Life Insurance Company Limited
5. Bajaj Allianz Life Insurance Company Limited

Sample Size: The sample size was total 300. 20 employees from each selected company of each selected city.

Sampling Unit: Individual employees (sales manager) of selected private sector life insurance companies.

Sampling Technique: Convenience sampling was used.

Method of Data Collection: The primary as well as secondary data have been used to attain the objectives of this paper. Primary Data for the study had been collected with the help of a standard Questionnaire to obtained data pertaining to the research objectives of the study. The secondary data was mainly drawn from various records, Annual Reports of IRDA, magazines, books, periodicals, journals and the Internet.

3.3 Research Instrument (Questionnaire Design)

A standard five point likert type scale questionnaire designed by B.L.Dubey, K.K.Uppal, S.K. Verma, C.K.Maini (1989) has been used in order to gather information.

3.4 Statistical Techniques Used for Data Analysis

Data collected from various sources have been analysed with the help of computer software Statistical Package for Social Sciences (SPSS) and other statistical tools like Factor analysis, t-test and ANOVA.

4. Results and Discussion

4.1 Objective 1: To identify the factors affecting job satisfaction of employees.

Exploratory Factor Analysis: Firstly, the data collected through questionnaire were recorded and analysed by SPSS to explore the factors. The main purpose of factor analysis is to discover simple patterns in the pattern of relationships among all the variables. In factor analysis large number of variables is reduced into fewer numbers of factors. In this paper explanatory factor analysis technique is used here to identify factors affecting job satisfaction.

Principal Component Analysis: PCA starts with extracting the maximum variance and puts them into the first factor. After that, it removes that variance explained by the first factors and then starts extracting maximum variance for the second factor and so on. This process goes to the last factor. The criteria used here are:

- i. Eigen value criterion, only those factors which have Eigen value greater than one are considered significant.

Table 1: Extraction Method: Principal Component Analysis

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sum of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.73	26.919	26.919	6.73	26.919	26.919	4.4	17.583	17.583
2	3.34	13.369	40.289	3.34	13.369	40.289	4.23	16.906	34.488
3	2.9	11.59	51.879	2.9	11.59	51.879	3.37	13.469	47.957
4	2.02	8.07	59.949	2.02	8.07	59.949	2.72	10.868	58.825
5	1.05	4.196	64.145	1.05	4.196	64.145	1.33	5.32	64.145
6	0.95	3.804	67.949						
7	0.9	3.58	71.529						
8	0.77	3.079	74.608						
9	0.69	2.76	77.368						
10	0.64	2.538	79.906						
11	0.55	2.195	82.101						
12	0.51	2.056	84.156						
13	0.5	2.018	86.174						
14	0.45	1.802	87.976						
15	0.38	1.527	89.502						
16	0.36	1.452	90.955						
17	0.35	1.398	92.353						
18	0.32	1.283	93.635						
19	0.3	1.192	94.828						

20	0.28	1.13	95.957						
21	0.26	1.021	96.978						
22	0.24	0.954	97.932						
23	0.21	0.829	98.761						
24	0.17	0.684	99.446						
25	0.14	0.554	100						

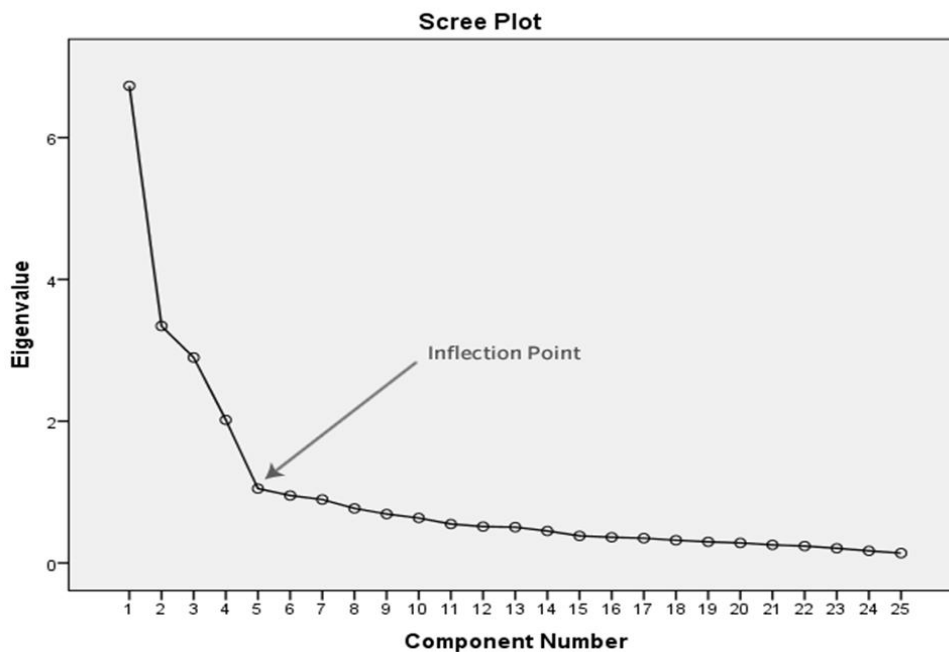


Figure 1. Scree Plot

- ii. In percentage of variance criterion, the cumulative percentage of variance extracted by successive factors is considered.
- iii. In Screen Test criterion, at least one factor more than latent root criterion is usually extracted. In the present study exploratory efforts were made with all above methods. Latent Root was used as

guideline. In all the attempts percentage of the variance explained was also taken into consideration. Based on result shown by Table 1: Principal Component Analysis and Figure 1: Scree Plot, there were five components found, whose Eigen value is more than 1.

Table 2: Rotated Component Matrix

	Component				
	1	2	3	4	5
I have been getting promotion as per my qualification and experience.	0.821				
My present job is as per my ability/qualification & experience.	0.820	0.327			
My job has helped me to learn some skill.	0.782				

Promotions are made on merit in this organization.	0.749				
On the whole, I feel I have good prospects of advancement in my job.	0.726				
Comparing the salary for similar jobs in other organization, I feel my pay is better.		0.818			
As per work requirement, my pay is fair.		0.815			
My pay is enough for providing necessary things in my life.		0.774			
I am satisfied with welfare facilities (Medical, etc.) provided by the organization.		0.645			0.461
I have full confidence in the management of the organization.			0.808		
Favouritism does not have any role to play in this organization.			0.765		
I think this organization treats its employees better than any other organization.			0.759		
I feel that I have opportunity to present my problem, to the management.			0.512		
My supervisor keeps me informed about all policies/happenings of the organization.				0.835	
My supervisor behaves properly with me.				0.816	
My supervisor takes into account my wishes as well as works done.				0.702	
There is high team spirit in the work group.				0.641	
Working condition in this organization is satisfactory.					0.678
My organization adopts best methods of work as early as possible.					0.612
I usually feel fresh at the end of the day's work.					0.588

Extraction Method: Principal Component Analysis, Rotation with Kaiser Normalization

Components were selected based on latent roots, Eigen value and minimum components; maximum information about variance rule was also considered. After extracting the Eigen values, Varimax rotation was applied for the selected variables.

The factor loading of the variables was then observed, and the variables were clubbed into factors. Factors responsible for job satisfaction extracted from PCA and Varimax rotation are shown in the Table 2. After Factor Analysis 5 factors have been constructed from 25 variables. These 5 factors are as follows:

Table 3: Factors for Employees' Job Satisfaction

Factors	Variables included	Factor Loadings
	I have been getting promotion as per my qualification and experience.	0.821

Promotion and Career Development	My present job is as per my ability/qualification & experience	0.82
	My job has helped me to learn some skill.	0.772
	Promotions are made on merit in this organization.	0.749
	On the whole, I feel I have good prospects of advancement in my job.	0.726
Pay and Compensation	Comparing the salary for similar jobs in other organization, I feel my pay is better.	0.818
	As per work requirement, my pay is fair.	0.815
	My pay is enough for providing necessary things in my life.	0.774
	I am satisfied with welfare facilities (Medical, etc.) provided by the organization.	0.645
Management Policies	I have full confidence in the management of the organization	0.808
	Favouritism does not have any role to play in this organization.	0.764
	I think this organization treats its employees better than any other organization.	0.759
	I feel that I have opportunity to present my problem, to the management.	0.512
Relationship with Supervisor and peers	My supervisor keeps me informed about all policies/happenings of the organization.	0.835
	My supervisor behaves properly with me.	0.816
	My supervisor takes into account my wishes as well as works done.	0.702
	There is high team spirit in the work group.	0.641
Working Environment and Condition	Working condition in this organization is satisfactory.	0.678
	My organization adopts best methods of work as early as possible.	0.614
	I usually feel fresh at the end of the day's work.	0.588

The study revealed various factors as shown in Table: 3 which affect job satisfaction of employees through the help of a statistical tool, exploratory factor analysis. Study extracted the factors affecting job satisfaction are promotion and career development, pay and compensation, management policies, relationship with supervisor and peers and last working environment and condition.

4.2 Objective 2: To find out the influence of demographic characteristics on employees' job satisfaction.

To attain second objective various hypothesis has been made. Statistical technique Independent

Sample t-Test and One-way analysis of Variance (ANOVA) have been used for hypothesis testing.

Hypothesis for Objective 2

Ho1: There is no significant influence of different demographic characteristics of employees on their job satisfaction.

Sub Hypothesis Ho1.1

Ho1.1 There is no significant influence of age of employees on their job satisfaction.

To test Sub hypothesis Ho1.1 ANOVA has been used.

Table 4: ANOVA Table

OnewayAnova

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3581.497	2	1790.749	1.703	0.184
Within Groups	312369.783	297	1051.75		
Total	315951.28	299			

Based on result shown by Table 4 the significance value (p value) is 0.184, which is more than α value that is 0.05 at 95% confidence level so we cannot reject the null hypothesis. It means that there is no significant influence of variation in age of employees on their job satisfaction.

Sub Hypothesis Ho1.2

Ho1.2 There is no significant influence of gender of employees on their job satisfaction.

To test Sub hypothesis Ho1.2 Independent Sample t-Test has been used.

Table 5: Group Statistics

T-Test

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Job Satisfaction	Male	208	75.9904	32.84659	2.2775
	Female	92	80.3261	31.69571	3.30451

Table 6: Independent Sample test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Job Satisfaction	Equal variances assumed	0.08	0.8	-1.07	298	0.288	-4.3357	4.06922	12.34375	-3.67235
	Equal variances not assumed			-1.08	180.12	0.281	-4.3357	4.01332	12.25488	-3.58348

Based on result shown by table 5 and 6 significance value for Levene's test for equality of variances is

.078 which is more than 0.05 at 95 % confidence interval we would use statistically more powerful t

values corresponding to equal variances assumed. Significance value corresponding to equal variances assumed is .288 that is greater than 0.05 hence we cannot reject the null hypothesis. It means that there is no significant influence of gender of employees on their job satisfaction.

Sub Hypothesis Ho1.3

Ho1.3 There is no significant influence of marital status of employees on their job satisfaction.

To test Sub hypothesis Ho1.3 Independent Sample t-Test has been used.

Table 7: Group Statistics

T-Test

	Marital Status	N	Mean	Std. Deviation	Std. Error Mean
Job Satisfaction	Single	85	73.988	35.27055	3.82563
	Married	215	78.637	31.33611	2.13711

Table 8: Independent Sample test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Job Satisfaction	Equal variances assumed	2.47	0.12	-1.12	298	0.265	-4.64897	4.1632	12.842	-3.544
	Equal variances not assumed			-1.06	139.28	0.291	-4.64897	4.38208	13.313	-4.015

Based on result shown by table 7 and 8, since significance value for Levene’s test for equality of variances is .117 which is more than 0.05 at 95 % confidence interval we would use statistically more powerful t values corresponding to equal variances assumed. Significance value corresponding to equal variances assumed is .265 that is greater than 0.05 hence we do not reject the null hypothesis. It means

that there is no significant influence of marital status of employees on their job satisfaction.

Sub Hypothesis Ho1.4

Ho1.4 There is no significant influence of service experience of employees on their job satisfaction.

To test Sub hypothesis Ho1.4 ANOVA has been used.

Table 9: ANOVA Table

OnewayANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	21075.694	3	7025.231	7.052	0
Within Groups	294875.586	296	996.201		
Total	315951.28	299			

Based on result shown by ANOVA Table 9 the significance value (p value) is 0.000, which is less than α value that is 0.05 at 95% confidence level so

we can reject the null hypothesis. It means that there is a significant influence of service experience of employees on their job satisfaction.

Table 10: Post Hoc Test

Post Hoc Tests: Multiple comparison

Tukey HSD

(I) Service Experience	(J) Service Experience	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
Below 1 Year	1-5 Years	7.04662	4.94961	0.49	-5.7416	19.8349
	5-10 Years	11.8897	5.60316	0.15	-2.5871	26.3665
	More than 10 Years	-28.29221*	9.44828	0.02	-52.704	-3.8808
1-5 Years	Below 1 Year	-7.04662	4.94961	0.49	-19.835	5.7416
	5-10 Years	4.84308	4.43493	0.7	-6.6154	16.3015
	More than 10 Years	-35.33883*	8.80586	0	-58.09	-12.587
5-10 Years	Below 1 Year	-11.8897	5.60316	0.15	-26.367	2.5871
	1-5 Years	-4.84308	4.43493	0.7	-16.302	6.6154
	More than 10 Years	-40.18190*	9.18912	0	-63.924	-16.44
More than 10 Years	Below 1 Year	28.29221*	9.44828	0.02	3.8808	52.7036
	1-5 Years	35.33883*	8.80586	0	12.5873	58.0904
	5-10 Years	40.18190*	9.18912	0	16.4401	63.9237

On the basis of result shown by Post-hoc test (Table 10) there is significant difference (0.016) between

employees having service experience below than 1 year and service experience more than 10 years.

Post hoc test is also showing significant difference (0.000) between employees having service experience 1-5 years and service experience more than 10 years and employees having service experience 5-10 years and service experience more than 10 years. Mean difference (I-J) showing that employees having more than 10 years of service experience are more satisfied than the employees having less service experience.

5. Conclusion

- The study revealed five factors (constructed from 25 variables) which affect job satisfaction of employees through the help of a statistical tool, exploratory factor analysis. The major factors together explained 64% variance among the variables used in the study. Study extracted the factors affecting job satisfaction are promotion, and career development, pay and compensation, management policies, relationship with supervisor and peers and last one working environment and condition.

This is in support to what was seen in the literature review by Starcevich (1972) who identified certain job-related factors such as use of best abilities, feelings of achievement, growth on the job and recognition, challenging assignments, and ranked them among the most important factors for both job satisfaction and job dissatisfaction regardless of the respondents' occupational level.

This is also in support of literature review by Thomas and Sasikumar (2002) who determined factors which are important in deciding job satisfaction of managers in co-operative sector, the following was found to be important – job security, opportunity to use knowledge and skill, opportunity to participate in decision-making connected with job, variety in job and challenge in job.

- Further to find out the influence of demographic characteristics on employees' job satisfaction various hypothesis has been made and after testing the hypothesis it was found that there is no significant influence of variation in age, gender, educational qualification and marital status of employees on their job satisfaction.

This is in support to what was seen in the literature review by Irene and Albert (1989) who

have indicated that sex cannot significantly account for differences in job satisfaction levels.

On the other hand, this is in contrast to what was seen in the literature review by Centers and Cantril (1946) who found in their studies related to job satisfaction, and marital status of employees that married workers tend to like their jobs more than unmarried workers.

This is also in contrast to what was seen in the literature review by Gannon and Hendrickson (1967) who found a high satisfaction level in women in his study.

- Further influence of more service experience of employees on their job satisfaction were found to be significant.

This is in support to what was seen in the literature review by Inflow (1951). who found that employees are dissatisfied in the early period of their service other than this he also found that first two years of service have the most depressing influence on job satisfaction level of employees.

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