Job Satisfaction Model for the Teaching Employees in Academic Institutes Using Expert System

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Abstract

The success of the educational system depends upon the involvement, effort and the contribution of the academic staff or their professional expertise. Job satisfaction causes a series of influences on various aspects of organizational life. The purpose of this model is to investigate the levels of job satisfaction among engineering faculty members in the engineering colleges of Sant Gadge Baba Amravati University, Amravati. This proposed also gives suggestions to maintain or improve faculty members' job satisfaction level. Our proposed model uses Expert system that provides the solution for Job satisfaction with Human Computer Interaction (HCI) by using a Chatterbot Like application. By using this application any Organization easily measures the feedback from employees and provides the better Job satisfaction to their employees. It helps the organization for achieving their goal of business with good ROI.

Keywords

Job Satisfaction, Expert System, HCI, Chatterbot Application, Need of Job Satisfaction, Factors Contributing For Job Satisfaction.

I. Introduction

Teacher is the most vital single factor of influence in the system of education. It is the teacher who matters most as far as the quality of education is concerned. The educational process is governed by the extent of his receptivity and initiative. The well equipped teacher is supreme in education. The entire time teacher is pivot in the system of education.

At the back of every great man, not unoften, a good teacher is there who kindled enthusiasm, fostered confidence and guided him to the way of progress. Alexander the Great said 'I owe my birth to my father but life to my teacher.' Teachers have a great responsibility at a time when our society is undergoing tremendous transformation. They are required to take up constructive leadership in reorienting education to meet national needs [1].

There is a serious shortage of engineering faculty in the India and demand for talented teachers has been increased. Engineering colleges /Universities are now looking for talented teachers and willing to pay them attractive salary. In this scenario to reduce the retention rate and to attract new talent are some challenges.

The role of teacher cannot be denied as she/he has been assigned the responsibility of molding future generation through education. In this process, this study was conducted to find out the factors those play pivotal role in the job satisfaction of teacher.

Students are one of the precious assets of any society. Well-being of society depends upon its students because these are the student who will take the responsibility of the success of the society in future and in achieving this goal teacher's play extremely important role. They are source of guidance at many crucial steps in academic life. When teachers are satisfied with their job they can perform their responsibilities with more concentration, devotion and competence [2].

Teacher's job satisfaction is a necessary factor that organizations desire in their Staff [3]. If Teachers are not satisfied then it may lead to absenteeism and excessive turnover [4-6]. If Teachers are satisfied then it can improve productivity, reduce staff turnover and enhance creativity and commitment. So, job satisfaction must be considered, but very few organizations seriously consider the job satisfaction [7].

The purpose of this proposed is to investigate the levels of job satisfaction among engineering faculty members in the engineering colleges of Sant Gadge Baba Amravati University, Amravati. This proposed also gives suggestions to maintain or improve faculty members' job satisfaction level. A questionnaire-based study was conducted on engineering faculty members working in the engineering colleges of Sant Gadge Baba Amravati University, Amravati.

II. Need of Job Satisfaction

Satisfied employees tend to be more productive, creative and committed to their employers, and recent studies have shown a direct correlation between employer's satisfaction and employee's satisfaction.

The manager who can create work environments that attract, motivate and retain hard-working individuals will be better positioned to succeed in a competitive environment that demands quality and cost-efficiency. What's more, organization may even discover that by creating a positive workplace for their employees, they've increased their own job satisfaction as well.

Job satisfaction helps the organization for achieving their goal of business with good ROI. Organization easily measures the feedback from employees and provides the better Job satisfaction to their employees.

If employees are satisfied with their job, they give their best for the organization. And it affects on the competitive environment of market that demands quality and cost-efficiency.

III. Factors Contributing For Job Satisfaction

Important factors that have an impact on job satisfaction level are work itself, pay, promotion opportunities, working conditions, job security and coworkers. So there are several factors that influence the work satisfaction level of the academic staff [2]. Following factors are more important:

A. Work Itself

Satisfaction of job is connected to the actual job presentation according to the Padilla-Velez (1993) Bowen (1980).If the employees are interested in their job they would more satisfy with jobs. If they join this profession due to their own interest their satisfaction level will be high as compared to if they are forced to do it. As quoted by Santhepparaj et al. (2005) an employee's job satisfaction is a task of the individual's personal distinctiveness and the uniqueness of the job itself.

B. Salary

Material rewards are much essential in job satisfaction. Along with their primary needs wealth meets luxury wants and desires of people (Ozdemir, 2009). According to the many researchers a constructive relationship exists between salary and satisfaction of

job. Increase in one thing must enhance the other. As identified by Souza-Poza (2000), salary is a forecaster of work satisfaction and according to Miller (1980) workers showed a better job satisfaction who were rewarded vastly.

C. Promotion Opportunities
As suggested by Baloch (2009) there is a constructive association among promotion and satisfaction of job according to numerous researchers. Academicians are more motivated and committed to perform a job and also more satisfied if promotion opportunities are available to them. As suggested by Kosteas "promotion expectations also effect job satisfaction, workers who believe a promotion is possible in the next two year report higher job satisfaction".

D. Working Conditions
Conditions are another aspect that has a major influence on the work satisfaction level of the employees .As determined by the Herzberg et al. (1959) working conditions are a key factor that effect job satisfaction level. Similarly Santhepparaj & Alam (2005) indicated a significant connection in the job satisfaction and working condition.

E. Job security
Lacy & Sheehan (1997) indicated that a clear relationship exists in the job security and satisfaction with the work. Another predictor of job satisfaction is security of services. Security of service is a feature that has a considerable affiliation with the job satisfaction. Siddique et al (2002). Permanent employees are more pleased with their jobs in comparison to the employees who are on contract.

F. Coworkers
One major determinants of satisfaction of job is the relationship with the coworkers. According to the DeVaney (2003) powerful determinant of job satisfaction is relationship with the colleagues at the work place. If the relationship with the coworker is strong and in positive direction then the satisfaction level of the individuals will be high as discussed by the Crossman & Abou- Zaki (2003). Similarly Lacy & Sheehan (1997) identified that one of the major predictor of job satisfaction is the relationship with coworkers. So the employees having good relation with their colleagues can have a higher level of job satisfaction [2].

IV. Objectives of the Study
Job life is one of the important parts of our daily lives which cause a great deal of stress. Due to the competitive nature of the job environment most of the people in the world are spending their time for job related work purposes resulting ignore the stressor those are influencing their work and life [8].
The success of the educational system depends upon the involvement, effort and the contribution of the academic staff or their professional expertise. Job satisfaction, retention and commitment to the organization are essential for all the academic institutions. According to them, higher job satisfaction of the faculty results in the healthy and positive climate of the institute. Positive climate of the university not only increase the job satisfaction of the staff but also the overall productivity of the institution of higher education.
We selected teaching because educators have been consistently identified as a group experiencing high stress at work [9].
A questionnaire-based study was conducted on engineering faculty members working in the engineering colleges of Sant Gadge

Baba Amravati University, Amravati. The main objectives of the proposed study are
1. To examine the teacher's job satisfaction level in academic institute.
2. Provide the solutions or suggestions for improving the job satisfaction level of teaching employees.

V. Research Methodology
Research methodology is define as a highly intellectual human activity used in the investigation of nature and matter and deals specifically with the manner in which data is collected and analyzed. Research Methodology has three types of methods: Historical, Scientific and Survey.
In this proposed work the Survey method is used. A questionnaire-based study was conducted on engineering faculty members working in the engineering colleges of Sant Gadge Baba Amravati University, Amravati. A questionnaire on four point "Fully Agree, Sometimes, somewhat Disagree, Fully disagree" following the Herzberg's theoretical framework, was developed. Data were collected using personally administered questionnaires for this study. All engineering faculty members in the engineering colleges of Sant Gadge Baba Amravati University, Amravati constituted the population of this study.
Collecting the data through different department and different college is the first step in this proposed work and then this data will use as an input to the expert system. After calculating various objects a tentative output will generate from the expert system. It provides the output in terms of percentage, and if output is not at satisfied level then system will generate a tentative solution to that teaching employee.
In fact, managers throughout the world are concerned with worker' attitudes toward work and the satisfaction they get from it. Job satisfaction is a sort of personal psychological judgment that reflects how well the personal job demands are fulfilled in this research.

VI. Experimental Result
A sample of 50 engineering faculty members was drawn from this population and convenience sampling method was adopted. The collected data were entered in expert system and were analyzed using proposed application.
Our proposed application of job satisfaction model is implemented using the expert system and it works like as chatterbot application. One knowledge base file is used to store the Keywords as the Knowledge base. Once Teacher enters the keywords, system checks that keyword in file and if it is match then sends the appropriate reply as an output to the Teacher, and if it doesn't match then sends the exception.
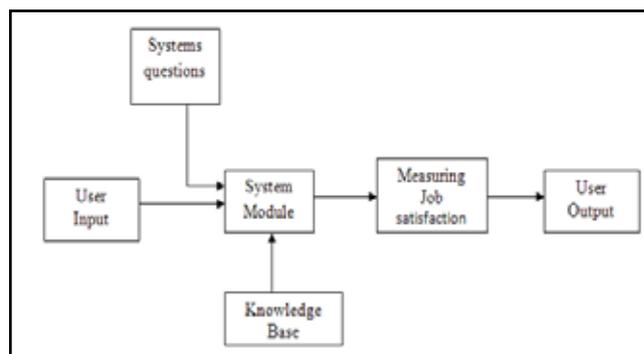Fig. 1, shows the work flow diagram of our model.

Fig. 1: Work Flow Diagram of Proposed Model

Following are the steps to measure the Job satisfaction of any Teaching employee.
- Teacher logins to the application with their name.
- Once they login to an application system asks some questions related to personal details to the teacher.
- The answers of each question must be given by the Teacher.
- After that system asks some questions to the Teacher.
- System finds the matching keyword within the knowledge and gives the reply from knowledge base.
- As per the answer given by the Teacher, system measures the job satisfaction and gives the reply with some solutions of Job satisfaction.
- If Teacher's answer does not match to the knowledge base of the system then it sends the option to the Teacher for getting better job satisfaction.
- Once the question-answer session is over then, system gives the option for getting the Job satisfaction Report.
- At last, Job satisfaction report including Factors, % of Job satisfaction and remark according to the satisfaction level will be displayed as an output.

A. Knowledge Base

Knowledge base is an expert system database in which all the keywords are stored. In Our one access file is created for knowledge base and all the keywords are stored. So that whenever user gives any answer to the system's questions, System checks the appropriate keywords from the knowledge base and sends the reply for that keyword. If keywords not match then system sends the reply with some other massage as…

1. COME AGAIN…
2. WHAT'S THAT SUPPOSED TO MEAN?
3. I'M NOT SURE I KNOW WHAT YOU ARE TALKING ABOUT, etc

Following fig shows the knowledge base access file.

	kwd	descr
1	HELLO	GOOD TO SEE YOU.
2	HELLO	HI, HOW ARE YOU
3	HELLO	HELLO DEAR !
4	YES	ARE YOU SURE ?
5	YES	PLEASE TAKE REST AND RELAX.
6	YES	TAKE CARE OF YOURSELF
7	YES	YOU SEEM TO BE VERY OPTIMISTIC.
8	NO	FEEL BETTER NOW…
9	NEVER	GOOD. KEEP IT UP.
10	ALMOST	TRY TO OVERCOME OUT OF IT.
11	ALMOST	MAINTAIN THE RIGHT ATTITUDE.
12	SOMETIMES	CREATE THE RIGHT ATMOSPHERE.
13	SOMETIMES	TRY TO CHANGE YOURSELF.
14	OK	NICE TO MEET YOU.
15	OK	HAVE A GREAT TIME AHEAD.

Fig. 2: Knowledge Base file

B. Model for Personal Details

When user login to the model; system first ask them some questions related to their personal details. Within the personal details user must give the answer of following items:
- GENDER
- AGE (YEARS)
- MARITAL STATUS
- EDUCATION
- INCOME
- POSITIONS

The item variables are asked by the system to the teacher as question and the teacher must have to enter the answer.

Following fig. 3, shows the personal details model. Within this module, teacher information with their personal details is given as an input to the expert system.
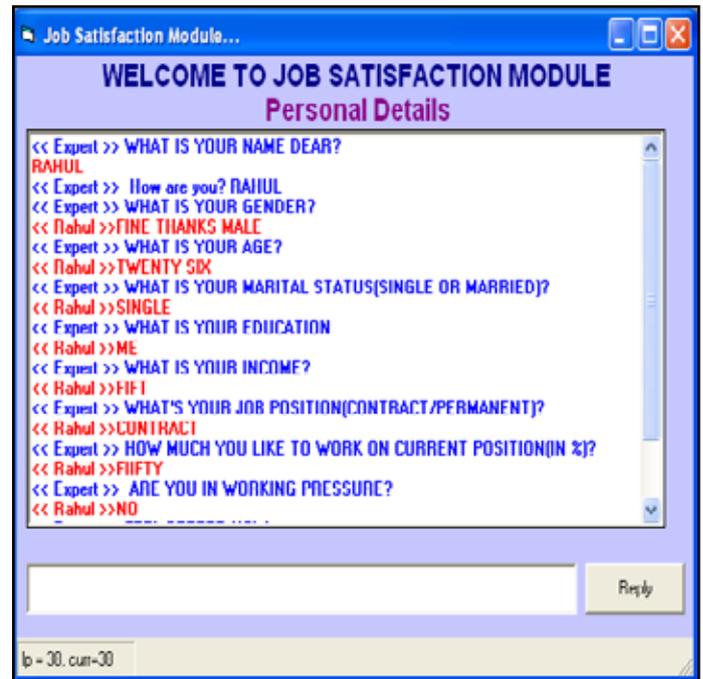

Fig. 3: Personal Details Module

C. Model for Measuring Job Satisfaction

There are many methods for measuring job satisfaction. One of them is for collecting data regarding job satisfaction is the Likert scale (named after Rensis Likert). Other methods of for gauging job satisfaction include: Yes/No questions, True/False questions, point systems, checklists, and forced choice answers.

In our model, we use the Yes/No questions method for measuring job satisfaction. After getting the personal details from user, system asks the question to user related to job satisfaction. User must give the answer of these questions.

The questions are as follows:
- ARE YOU IN WORKING PRESSURE?
- ARE YOU COMFORTABLE WITH WORKING ENVIRONMENT OF YOUR COMPANY?
- ARE YOU UPSET BECAUSE OF SOMETHING THAT HAPPENED UNEXPECTEDLY?
- ARE YOU FELT THAT YOU HAVE BUSY SCHEDULE?
- ARE YOU FELT NERVOUS AND STRESSED? Etc……

The system checks the answer with the options which are stored in knowledgebase file. As per the input given by the teacher, calculate the Job satisfaction.

If the teacher doesn't satisfy with its current job then system gives the appropriate options to the teacher. So that it gets the good job satisfaction. By using this application any organization checks the teacher satisfaction level, there problems and try to find the solution of it. It helps the organization to achieve the educational goals with teacher's satisfaction.

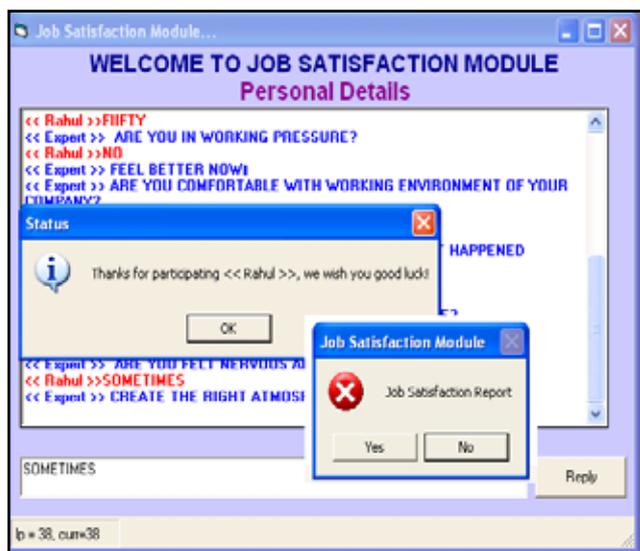Fig. 4, shows the module for measuring job satisfaction

Fig. 4: Module for Measuring Job Satisfaction

System generates the job satisfaction report on the basis of following factors:
• Work Environment
• Company/Organization Policy
• Job Relation
• Motivation , Performance, Appraisal
Following fig. 5, shows the output report.

JOB SATISFATION REPORT

Name Of Faculty	Factors For Job Satisfaction	% of Satisfaction	Remark
Rahul	Work Environment	75	Good
Rahul	Company/Organization Policy	50	Try to Change
Rahul	Job Relation	65	Maintain The Right Attitude
Rahul	Motivation ,Performance, Appraisal	79	Good Keep It Up

Fig. 5: Job Satisfaction Report

VII. Conclusion
Job satisfaction represents one of the most complex areas facing today's managers when it comes to managing their employees. Job satisfaction describes a person's overall affective reaction to the set of work and work related factors. Once any organization measures the Job satisfaction of employees they can easily manage their business growth.
Using this application we can easily find out the solutions on problems of unsatisfied employees and it shows the better impact on business outcome with employee satisfaction.

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