DETERMINANTS OF JOB SATISFACTION IN THE INDIAN BIOTECHNOLOGY SECTOR : ISSUES AND INTERVENTIONS

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ABSTRACT

Job-satisfaction is deliberated as a key motivation factor for employees in most industries. According to credible and established research, job satisfaction positively impacts the potential and performance of these employees. Productivity of employees too has a considerable associationwith their satisfaction level at work place. This study statistically and analytically examines the determinants of job satisfaction of employees in the Indian biotechnology sector. It also analyses the impact of job satisfaction based on level of management in the Indian biotechnology sector. Based on the findings, thisstudy provides insight on determinants influencing job-satisfaction of employees, their preferences and also highlights key areas for human resource professionals to study, in order to launch initiatives for organizational improvement and overall development of employees. The respondents included 295 employees from the seven companies in Indian biotechnology sector. The application of ANOVA and other statistical examination revealed that overall job satisfaction among employees in the biotechnology sector in India has a significant relation with the level of management. Besides evaluating the determinants of job satisfaction, the statistics revealed that junior level management has a far more job satisfaction level compared to middle and senior management in the Indian Biotechnology sector.

Key Words : Job satisfaction, Indian biotechnology sector, Biotechnology, Organization, Employee satisfaction.

INTRODUCTION:

Job-satisfaction is a concept studied rigorously in organizations by human resource professionals and by researchers all over the world in different industries. Job-satisfaction, therefore, is one of the most studied concept in the organizational behaviour study. Korman (1977) cited that the interest in this parameter is predictable because of its role as a potential predictor of other organizational facets such as performance and turnover. Researchers like Schwab & Cummings (1971) opined that the concept of job satisfaction has been studied in great detail in business houses, industrial enterprises and government departments, however research in this area has been ignored particularly in universities, institutes and colleges. Nevertheless, the situation has changed in the last few decades (Neumann, 1978).Yet another definition given by Locke (1976)states that job satisfaction is a pleasurable or positive emotional state, resulting from the appraisal of one's job or job experiences.

This parameter of job-satisfaction, now pegged as an increasing concern among human resource professionals, has been defined in

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different ways. A section of researchers view it as a measure of how contended an individual is with the job being pursued while others define it irrespective of the different aspects of the job such as nature of work or the leadership of the superior (Spector, 1997).

A look at the global scenario of job satisfaction reveals that in 2013, 81 percent of U.S. employees reported overall satisfaction with their current job, unchanged from 2012 (SHRM, 2014).Canada has the highest per capita proportion of biotechnology firms in the world (BioTalent-Canada, 2008), with bio-based industries estimated to be worth approximately CAD78.3 billion(Pellerin&Taylor, 2008). Despite this growth, the loopholes in the human resource aspects of various organizations like employee recruitment and retention, dearth of management and leadership skills among leaders in such organizations in these countries has proved to be a threat in the sector's success.

The human work force in India is enormous due to the population and given the relevance that bio-technology has in the modern times, there is a need to address the concern of employees in this field. Biotechnology sector is seen as a rich environment for studying the interplay of human resource management and organizational behaviour to gauge the performance of employees and the organizations themselves.

THE INDIAN BIOTECHNOLOGY SECTOR:

There are 110 units in the healthcare product sector of India's biotechnology industry. 140 more are in the agriculture segment and 300 in industrial and other biotechnology products sector (Deshpande, 2006).Biotechnologists all over the world, have a reputation of taking up tasks without additional training. The real challenge that the managers in the biotechnology industry face is bridging the gap between a team working with a science background to working on a commerce related situation. This transition of taking the team from science to management is one of the challenges faced in industry. It is also important to understand the dimensions of job satisfaction for R&D professionals in biotech sector in order to align and integrate different HR subsystems for improved organizational effectiveness.

SURVEY OF LITERATURE:

A credible and highly quoted research by Herzberg (1957) and fellow researchers recognized and approved the complexity of job-satisfaction and included variables such as job-attitudes, job factors and behavioural effects. This factor called job-satisfaction has a very subjective orientation since the evaluation by every employee about his/her job depends on personal values, perception of occupational problems and environment.

Research has also established that highly educated workers often express dissatisfaction with their jobs and this is despite favourable job content and work conditions. This is because their education has raised their expectation of rewards that they get from jobs. Employees across all sectors are facing unparalleled competition, job pressures and factors like job security, autonomy and freedom appear to be at stake. Moreover, sectors like Biotechnology, for instance, require highly specialized skills and greater sense of involvement than other professions.

Certain researchers have gone to the extent of establishing that job-satisfaction among females is better despite inferior conditions of employment due to the lesser expectations that they have about rewards at workplace(Glenn & Feldberg, 1977).

Similarly job-satisfaction of social workers has also been studied at length. Researchers have investigated the determinants of job-satisfaction of social workers (Arches, 1991).The impact of age as a determinant on job-satisfaction was found thought-provoking and research cited that older workers were more satisfied withtheir jobs than younger ones (Butler, 1990).

Dissatisfied people are likely to contribute very little for any purpose and hence job satisfaction is one of the most popular and widely researched topics in the field of organizational

psychology(Spector, 1997).

Research conducted by Singh &Kohli (2006),Thakur (2007) and Jha et al. (2008) shows that organizational contextual factors such as pay, growth opportunities, job security, among others, influence an employee's perception of job satisfaction.

Job satisfaction among Information System (IS) personnel has been studied by researchers and it was found that job-satisfaction has intrinsic value. Factors like turn-over and performance significantly affected job-satisfaction of employees in certain sectors. It is positively related to job-performance in case of IS personnel and is negatively related to turnover. The moderating effect of personal variables like age, gender, organizational tenure and education has found little mention in the study. Later on, a model proposed by Baroudi to study the turnover intention of IS professionals was modified slightly (Baroudi, 1985).

Locke (1983) and certain other researchers observed that there was a lack of systematic measurement of satisfaction with major aspects related to job. The contribution of each aspect to the overall satisfaction of employees needed to be explored by researchers. Berg (1976) had concluded that monetary compensation as an affecting variable, it has long been established that low and minimum wage workers have been less satisfied that those who have been better paid

After studying different studies on job satisfaction, it has been found that most of the authors used multifaceteddimensions of job satisfaction in order to find interlinkages among those variables understudy.

Rationale & Significance of the Study : In today's world, most industries are motivating employees to perform to their maximum potential. This gives rise to serious concerns about job satisfaction of employees. Researchers have indicated that if an employee is motivated, s/he will be generally satisfied with her/his job, s/he will give best efforts and contribution to the job assigned to her/his. Biotechnology sector, being among the most progressive and sort afterin India, it is thought prudent to map satisfaction of employees in this field.

The purpose of the study is to identify factors that influence overall employee satisfaction in the biotechnological companies of India. This study will provide insight on determinants that influence the job-satisfaction of employees, their preferences and shall also highlight key areas for organizations to consider, as they develop and enhance initiatives for organizational improvement. The significance of the study is that it analysis the relation of level of management to the satisfaction levels of the employees.

RESEARCH DESIGN

Hypothesis: Through an exhaustive review of literature, the need for the study that has emerged is quite evident. The importance of the study was emphasized by exploratory discussions with employees, at different levels (Junior, Middle and Senior). Based on these, the following hypothesis has been designed:

H_{01}: Job Satisfaction of employees does not significantly depend on the organization in which they are employed.

H_{02}: Job Satisfaction of employees does not significantly depend on the level of management at which they are employed (managerial level employees).

Methodology: This study focused on the seven biotechnological industries of various regions of India. 295 employees from seven biotechnological firms in India participated in the study. A close ended questionnaire was prepared for the managerial employees of the sampled units, for studying the level of job satisfaction among the employees. The questionnaire maps the demographic profile of respondents i.e. Age, Qualification, Gender, Professional Experience, Level of Management. Primarily the level of management was studied for the purpose of finding correlation with overall job satisfaction. The employees were asked to fill up 20 questions of job satisfaction scaleamong managerial employees in the sampled units. In general, a five point Likert scale was used in the questionnaire. The 5-point scale range from:

1 - Strongly Disagree (SD)
2 - Disagree (DA)
3 - Undecided (U)
4 - Agree (A)
5 - Strongly Agree (SA)

Sample: 295 employees participated in the study as per the list provided by the human resource department of companies in the respective industry. For the purpose of this research, both primary and secondary data has been collected to present a comprehensive overview of the biotechnological industries in these regions.For systematic explanation of analysis, the seven companies have been titled as Organization 1,2, 3, 4, 5, 6 and 7 in thesubsequent graphs for inferential analysis.

Research instruments:The study focuses on measuring Job Satisfaction using standardized questionnaires. For the purpose of measuring level of Job Satisfaction, the Job Satisfaction questionnaire developed by B.L. Dubey, C.K. Maini and K.K. Uppal, 1982 has been used. This Job Satisfaction questionnaire-cum-scale contains 20 statements regarding the different factors which can affect the satisfaction level of a person.

DATA ANALYSIS & RESULTS

Pearson (product-moment) correlation analysis was performed to test the collinearity of the measurement scales.SAS 9.3 and SPSS 21 were used to analyse data collected from the selected biotechnological companies. Descriptive statistics and inferential statistics are presented in this paper through Principal Component Analysis (PCA). This is done to describe variability among observed, correlated variables in terms of a potentially lower number of unobserved variables called 'factors'. These factors represent job satisfaction in various biotechnological industries under study. Further analysis of variance technique (ANOVA) used to understand the variation among all biotechnological companies under study on different factors related to job satisfaction revealed interesting findings.

I. *Descriptive Analysis* : Although 300 employees from different Biotechnology companies responded to the survey, some participants were excluded from the analysis because of missing data on the dependent or independent variables and the extreme values found in the answer sheets. Consequently, the results reported in this study are based on 295 responses. Of 295 respondents, 292 provided information on gender; 200 (68.5%) male and 92 (31.5%) female, while others did not respond to the column citing their gender.

(i) A detailed view of the demographic profile

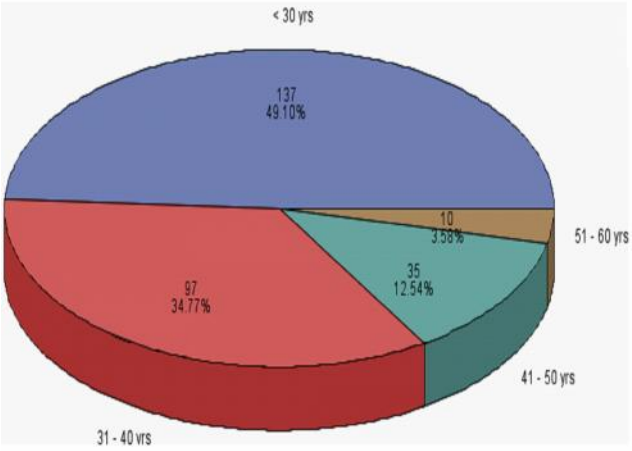

Figure 1 : Age reported by respondents

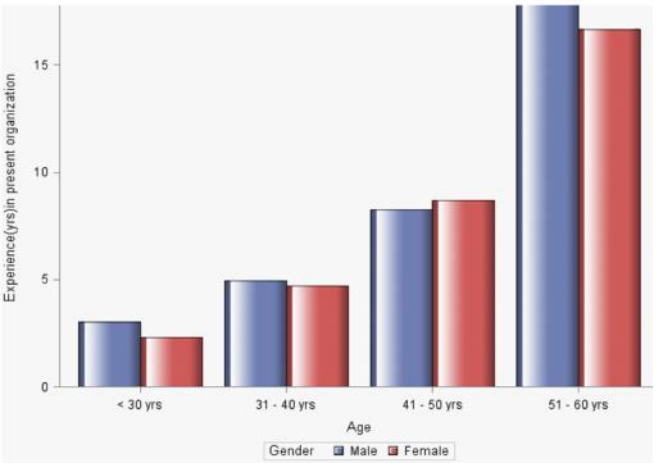

Figure 2: Distribution of respondents' xperience in present organization by gender and age

revealed that of the 295 respondents, 279 provided information on age. 49.1% respondents were of age less than 30 followed by 34.77% were of age between 31-40 years. Figure 1 shows that only 3.58% respondents were of age between 51- 60 years.

(ii) Distribution of respondents' experience in present organization by gender and age is shown in Figure 2. Male respondents spent more time in that organization compared to female respondents in each category of age except in the category of 41-50.

(iii) Six respondents did not reply about the experience in present organization. As predictable, with age, number of years spent in the organization increases. Respondents who spent more than 15 years in the present organization were of age between 51 - 60 years followed by respondents aged between 41 - 50 years, 31 - 40 years and less than 30 years.

(iv) Of 295 respondents, 263 provided information on level of management they are currently working on. It is prominent from Figure 4 that the middle level management employees were far more experienced (experience in the current organisation)compared to junior and senior level management employees.

(v) Yet another finding of the study is pertaining to the level of management and the gender. Whereas there were more male respondents around 25% at middle level than female around 8%.

(vi) There was a significant relationship between years of employment in present organization and organizational title ($p<0.001$) and between age and organizational tile ($p<0.001$). Figure 4 provides the graphical representation of distribution of respondents' level of management they are working by age and experience in present organization.

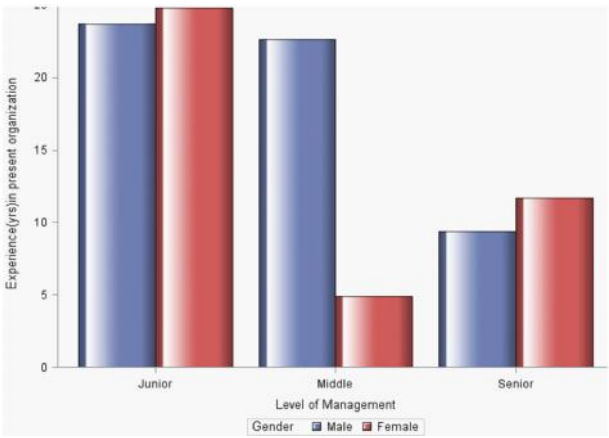

Figure 3: Distribution of Respondents' Level of Management by Gender and Experience in Present Organization

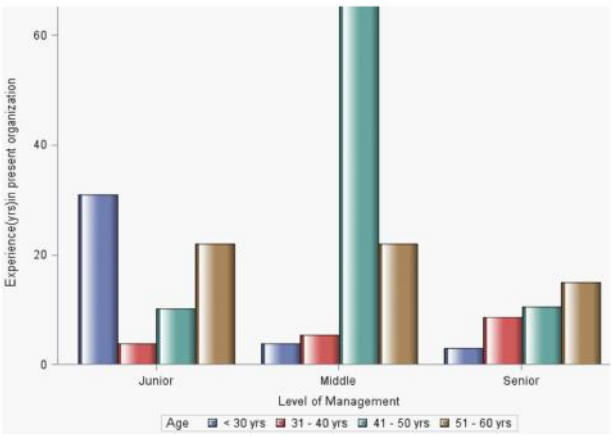

Figure 4: Distribution of Respondents' Level of Management by age and Experience in Present Organization

Twenty related questions on job satisfaction in the selected questionnaire were further divided in five categories to assess various aspects of job satisfaction. They are (i) Team Working and Supportive Culture, (ii) Working Conditions (iii) Quality of work life(iv) SupervisoryStyle (v) Skill Enhancement.

A detailed view of the response to the questionnaires, enables to figure out the determinants of job satisfaction in the biotechnology industry.

Figure 5 displays gender-wise agreement level for question "I have been getting promotion as per my qualification and experience". 73% male respondents and 71% female respondents registered that "I have full confidence in the

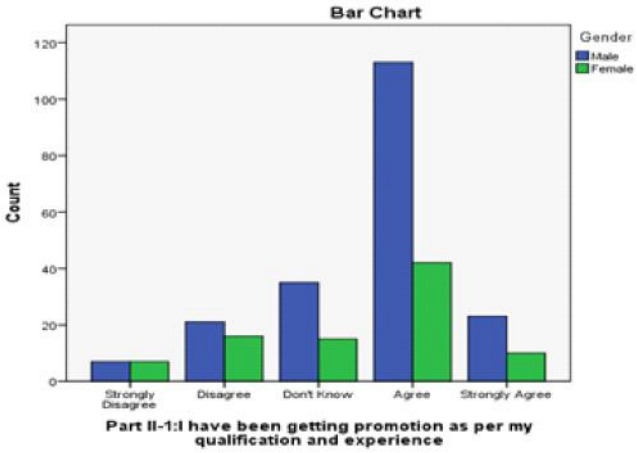

Figure 5: Distribution of Responses based on "I have been getting promotion as per my qualification and experience" by Gender

management" whereas only 59% of total respondents claimed that "Favouritism does not have any role to play in my organization".

87% of the respondents believed that they have satisfactory relationship with their supervisors. Merely 56% respondents said that "My pay is enough for providing necessary things in my life" however 84% respondents proud to their organization. 68% respondents were satisfied with welfare facilities (medical etc.) provided by organization. "I have good prospects of advancement in my job" answered by 69% respondents.

II. *Inferential Analysis:* Exploratory principal component factor analysis with Varimax rotation supported the composition of the performance scales. The Cronbach's alpha for the variables used in this study were; team building and supporting culture (0.875), working condition (0.766) and quality of work life (0.761). Kaiser-Meyer-Olkin's measure of sampling adequacy was 0.887 in factor analysis which is tagged as 'meritorious'.

Through an Analysis of Variance (ANOVA) technique, it is inferred that the job satisfaction factors like team building and supportive culture, working condition and quality of work life, in all seven biotechnological companies under study are statistically different. There was a statistically significant difference found among seven industries over three different factors relating to job-satisfaction i.e. team building and supportive culture, working condition and quality of work life ($p<0.001$).

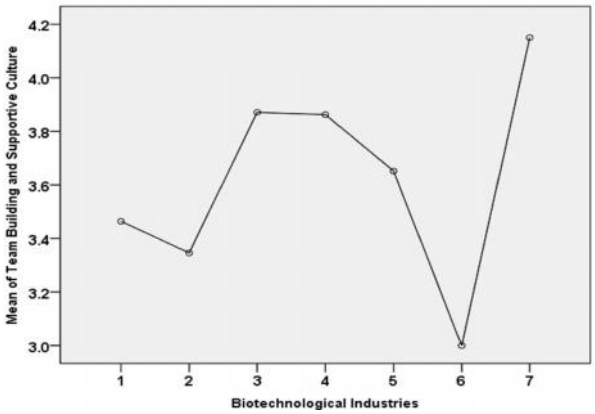

Figure 6: Distribution of average score of team building and supportive culture among seven biotechnological industries

Figure 6 displayed that organization 7 gave highest attention on team building and supportive culture followed by organization 3 and 4 whereas the sixth organizationwas not focused on team building and supportive culture.

Figure 7 and 8 displayed the distribution of average score of working condition and quality of work life respectively among seven biotechnological organizations.

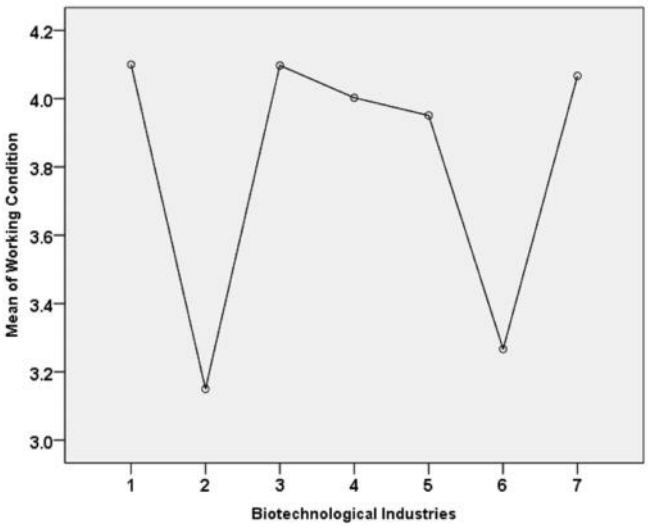

Figure 7: Distribution of average score of working condition among seven biotechnological organizations

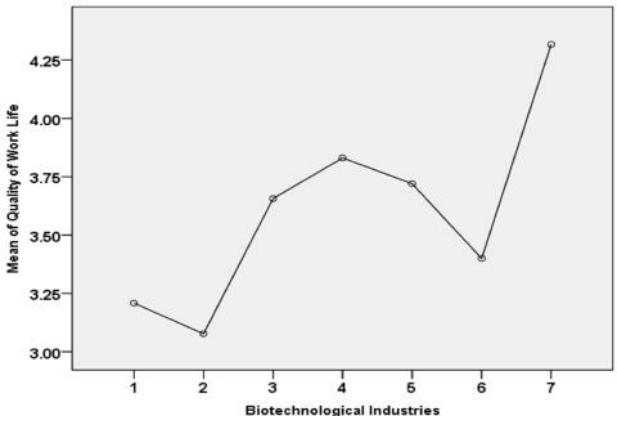

Figure 8: Distribution of average score of quality of work-life among seven biotechnological organizations

Organizations 2 and 6 have considerably poor working conditions (Bonferroni Correction).

III. *Correlation of Job Satisfaction with the Level of Management:* A look into the correlation of job satisfaction of biotechnology sector employees vis-à-vis the level of management reveals interesting findings. The Chi-square test is applied when two variables have to be found for independence and dependence. Less than 0.05 value implies significant association. The table 1 below indicates that the probability value is 0.01 which is <0.05, implying its significance. Therefore, there is a considerable relation between the level of management and job satisfaction of these employees. As the level of management increases from junior to senior level management, the job satisfaction among employees in the biotechnology sector decreases.

(It is worth observing that for this particular inference, out of 295 employees only 263 replied to the relevant questions related to level of management).

Table1: Correlation of Job Satisfaction vis-s-vis the Level of Management

Statistic	DF	Value	Prob
Chi-Square value	100	135.7857	0.0100*

**This is known as significant p-value. Significant can be tested by comparing p-value with alpha = 0.05. If p-value is less than alpha then experiment is statistically significant.*

CONCLUSION

'One Plan for All' strategy may not be the best strategy in the biotech sector as both the hypotheses 1 and 2 have been disproved. Itmeans that the job satisfaction of employees in the Indian Biotechnology significantly depends on the organization in which they are employed. Employees in all seven organizations experience a different levelof job satisfaction altogether. At least one out the seven companies has a considerably poor working conditions rating by its employees. The resultsindicate at the need to introspect the work conditions in the biotechnology companies. Additionally, job satisfaction of employees significantly depends on the level of management at which they are employed (managerial level employees). Findings revealed that the senior level management employees were less satisfied with their job compared to junior and middle level management. As the level of management increased, the job satisfaction decreased among employees. The results hint at a serious need to introspect the work life in Indian biotechnology sector, particularly from the perspective of senior level managers. The study also reveals that a majority of respondents (nearly 73% males and 71% females) agree that they have been getting promoted as per their qualifications, which indicates a relatively healthy process of escalation in the sector. To add to this, more than half the respondents (59%) claimed that favouritism did not play any role in the organization. However, a major duality was related to the pay scale. Nearly 56% of the respondents felt that their pay was enough for them to provide necessary things in their life. A need to relook at the pay-scales of these employees of biotechnology sector has

arisen from the study.

It further found that there existed significant difference among seven organizations under study. Team building and supportive culture, working condition and quality of work life played key role in differentiating the impact of job satisfaction for the selected sample of employees. The findings of the study provide an excellent base for introspection by human resource professionals in the biotechnology sector who need to look at job satisfaction aspect of employees more closely. The human resources department needs to tailor made its policies to increase the satisfaction. It provided further insights into how to design and execute related HR processes in order to increase the job satisfaction. The management must re-examine related leadership issues in order to enhance job satisfaction across different level & ranks in the biotech sector.

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