



## Optimizing employee job satisfaction by improving factors based on Cartesian matrix

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### Abstract

There was a decrease in the percentage of employee satisfaction from 2013-2014 on the aspects of culture of 6.94%, career opportunities and promotions of 6.88%, communication of 3.37%, leadership of 2.93%, work activities of 4.60%, work environment of 2.65%, and compensation or rewards of 3.36%. This study aimed to optimize employee job satisfaction by improving factors based on the Cartesian matrix in Menur Mental Hospital, East Java. research was conducted from April to June 2016. Primary and secondary data were collected using a questionnaire. Respondents were employees of the Menur Mental Hospital, East Java, which consisted of 82 samples. The sample represented all professional groups. 8 samples were taken from the total medical group, 25 samples were taken from the total nursing group, 3 samples were taken from the total pharmacists' group, and 46 samples were taken from the total population of other health and non-health workers groups. The results showed a gap between expectations and perceptions of attributes and sub-attributes of job satisfaction. The biggest gap in the medical group was the attribute of empowerment of human resources and the sub-attribute of the proactive management attitude to seek feedback from employees. The biggest gap in the nursing group was the attribute of communication and the sub-attributes of the proactive management attitude to seek feedback from employees. Based on the analysis by the Cartesian matrix, the attribute of communication is the job satisfaction attribute having the most sub-attributes that go into the improvement priority.

**Keywords:** Cartesian matrix, expectations, gap analysis, job satisfaction, perception

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### INTRODUCTION

Job satisfaction is how someone feels the work and all its aspects. Job satisfaction is also influenced by fair and appropriate remuneration, pleasant work environment, pleasant co-workers, appropriate placement of expertise, workload, supporting equipment, leader attitude, and the nature of the work performed (Haile, 2009; Kim, & Jogaratnam, 2010). Workplace job satisfaction in Britain: evidence from linked employer-employee data. The dynamic internal and external work environment of the organization produces broad implications for the organization. The internal environment of the organization not only includes invisible physical conditions such as workspace conditions, ventilation spaces, and physical conditions of buildings, but also explicitly invisible things that affect internal environmental conditions such as employee habits, organizational behavior, and meeting intensity. Organizational internal conditions continue to change and develop, which require appropriate learning so that

various problems that have an impact on reducing employee job satisfaction can be anticipated.

Menur Mental Hospital is the only mental hospital owned by the Government of East Java Province with a title of class A hospital classification and has been a Regional Public Service Agency since 2008. The number of beds available is 260 beds out of a capacity of 300 beds. The division of types of HR groups in Menur Mental Hospital is based on Minister of Health Regulation No. 56 of 2014 concerning Hospital Classification and Licensing Article 61. Based on the 2013 and 2014 survey results obtained the achievement of the Employee Satisfaction Index for Menur Mental Hospital tends to decrease. This reduction includes other aspects of culture and organization, career opportunities or promotions, communication, leadership, work activities, work environment, and reward or compensation systems for all groups of medical,

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**Table 1.** Characteristics of employees who are less satisfied with all the attributes of job satisfaction

	Types	Communication	Empowerment	Work Environment	Reward or Compensation System
Age Group	26-35	76.20	71.43	66.67	83.33
Gender	Women	76.93	75	80.36	67.86
Education Level	Diploma	78.73	76.60	70.21	57.45
Work Group	Other health and non-health workers	58.70	73.91	60.87	54.35
Work Period	> 7 years	63.83	57.31	57.31	57.31
Employment Status	Civil servant	71.43	76.19	79.37	74.60
Marital Status	Married	71.43	77.78	80.95	69.85
Work Unit Rotation	1 time	66.67	77.78	75	66.67

pharmaceutical, nursing, and other health and non-health workers. Therefore, this study focuses on optimizing employee job satisfaction by improving factors based on the Cartesian matrix at Menur Mental Hospital, East Java.

## MATERIAL AND METHODS

### Research designs, populations, samples and variables

This research was a descriptive observational with a cross-sectional study. The study population was all employees of Menur Mental Hospital with a total of 450 employees in 2016. The researchers calculated the sample size using the Slovak formula and obtained 82 people consisting of groups of medical workers, nursing medical personnel, pharmaceutical workers, and other health and non-health workers at Menur Mental Hospital. This research was conducted from February to July 2016. The independent variable in this study was the characteristics of employees, while the dependent variable was employee job satisfaction.

### Instrument

The instruments used were questionnaires, Cartesian matrix, and focus group discussions.

### Research procedures and analysis

The data collected were Menur Mental Hospital staff selected as respondents representing groups of medical workers, nursing staff, pharmaceutical workers, and other health and non-health workers. Primary data included age, gender, education level, workgroup, work period, work unit rotation, employment status, and marital status, while data on expectations and assessments included communication attributes, empowerment of human resources, work environment, and rewards or compensation systems. Respondents were given a structured questionnaire containing two parts. The first part contained the respondent's social profile and respondent data related to the respondent's identity and social circumstances. The second part contained questions related to the variables studied. From all data collected, a validity test was performed using the Pearson Correlation Coefficient. The validity test results could be seen through the r-count results compared to the r-table. If  $r\text{-table} < r\text{-count}$ , it was valid,

while if  $r\text{-table} > r\text{-count}$ , it was invalid; with the calculated r-value greater than 0.5. The reliability test in this study used Cronbach's Alpha, which was conducted simultaneously on all questions. If Cronbach's Alpha was  $>0.60$ , it was then reliable, while if Cronbach's Alpha was  $<0.60$ , it was then unreliable. Invalid or unreliable question items were corrected and changed, or if impossible, those question items would be eliminated and the questionnaire will be retested. The reliability test of the research questionnaire was carried out for all questions totaling 132 items and all of them were reliable with a Cronbach's Alpha value of  $>0.60$ .

## RESULTS

After distributing the questionnaire, the characteristics of the study respondents were classified by age, gender, education level, workgroup, work period, work unit rotation, employment status, and marital status. Characteristics of respondents who were dissatisfied with all attributes of job satisfaction had the age group of 26-35, were female gender, had D3 education level, were other health and non-health worker groups, had work period of more than 7 years, were civil servants, were married, and had the number of rotations of 1 (one) times.

Assessment and identification of gaps in the attributes and sub-attributes of job satisfaction, a questionnaire containing 33 question items related to the communication, empowerment, work environment, reward or compensation system attributes were used to obtain data on expectations. The gap was obtained by valuation value minus the expectation value of respondents. In the medical group, the biggest gap of the job satisfaction attribute was in the attribute of HR empowerment and the sub-attributes of the proactive management attitudes to seek feedback from employees. In the nursing staff group, the biggest gap of the job satisfaction attribute was in the attribute of communication and sub-attribute of the proactive management attitude to seek feedback from employees. In the pharmaceutical group, the biggest gap of the job satisfaction attribute was in the attribute of communication and the freedom attribute to express opinions and ideas, the freedom attribute to send suggestions or input, the freedom attribute to make

complaints, the sub-attributes of proactive management attitude to seek feedback from employees, the sub-attributes of mutual trust between employees and management, and the sub-attributes of security guarantees in the workplace. In other health and non-health workers groups, the biggest gap of the job satisfaction attribute was in the attribute of the HR empowerment and the attribute of the work environment and the sub-attribute of services.

The next step was analyzing the gaps in the attributes and sub-attributes of job satisfaction using the Cartesian matrix in 4 quadrants with details: quadrant I was a superior service, quadrant II was the main priority for improvement, quadrant III was a low priority for improvement, and quadrant IV was spoiled by the hospital. The X-axis was the average rating of a group of medical or nursing or pharmaceutical or other health and non-health workers on job satisfaction attributes. Meanwhile, the Y-axis was the average expectation of a group of medical or nursing or pharmaceutical or other health and non-health workers on job satisfaction attributes. The midpoint coordinates of the Cartesian Matrix were the averages of the mean assessment (Y-axis of the Cartesian) and the average expectations (X-axis of the Cartesian) of a group of medical or nursing or pharmaceutical or other health and non-health workers on job satisfaction attributes. The priority issues that would become strategic issues were the sub-attributes occupied in quadrant II. Sub-attributes in quadrant II would be sorted by priority criteria based on the values in the highest expectations and lowest ratings. The higher the expectations and the lower the assessment would be the priority in improvement. Based on the Cartesian Matrix, solutions to the most important problems must be found for groups of other health and non-health workers in the attribute of reward or compensation system in quadrant II (priority improvement) in the following order: (1) services, (2) family and employee health insurance, and (3) non-financial compensation. The order of resolution was to solve problems in sub-attributes scattered in Quadrant II (Improvement Priority), Quadrant IV (Over Service), and Quadrant III (Low Priority Improvement). However, in this study, problem-solving recommendations were focused on the problems in quadrant II as a strategic issue.

## DISCUSSION

From the results, it can be known that the employees in the 26-35 years age group feel less satisfied with all the attributes of job satisfaction. These results indicate that the human resources at Menur Mental Hospital are very productive and become an important asset for success. The 26-35 year age group tends to feel less satisfied in terms of work, in which the age of 24-34 years and age of 40-45 years that causes dissatisfaction

with the job. The older the employee, the higher the level of satisfaction (Li, Chen, & Kirsner, 2007; Spector, 1997; Wirajaya, Nopiyani, & Wijaya, 2016). Moreover, for younger employees, the desire to move is greater (Haile, 2007; Self, & Dewald, 2011; Baba, et al, 2015).

Most employees are women and feel less satisfied with all the attributes of job satisfaction. There is no consistent difference between men and women in problem-solving abilities (Gilaninia, Rankouh, & Gildeh, 2013; Senge, 2006). However, there are differences of opinion that state that there are differences in the level of job satisfaction between men and women, where women tend to feel more satisfied at work (Haile, 2015). This situation is actually beneficial for hospitals, for example, related to the implementation of nursing care to patients who need high thoroughness, patience, and empathy, in which female nurses are commonly more patient, more careful, and have a greater sense of empathy than male nurses (Erfinia, et al. 2019).

Most employees have a diploma level of education and feel less satisfied with all the attributes of job satisfaction. This shows that Menur Mental Hospital has a fairly high level of education, which is adjusted to the needs of personnel and job analysis at Menur Mental Hospital. The relationship between education level and job satisfaction is that the higher the education level the more dissatisfaction will be raised. This is related to increasing expectations for the benefits received. The higher the level of education, the higher the demands for job satisfaction (Spector, 1997; Haile, 2007; Frese, 1982; Robbins, & Judge, 2013). Indeed, there is no influence between job satisfaction with salary for highly educated employees, however, there is a weak relationship between education level and satisfaction with salary (Haile, 2009; Gilaninia, Rankouh, & Gildeh, 2013; Garvin, 1998).

Most respondents in the study were other health and non-health workers and were less satisfied with all the attributes of job satisfaction. The percentage of each professional group is adjusted by the number of research samples representing the number of professional groups at Menur Mental Hospital. Most of the respondents had a work period of more than 7 years and felt less satisfied with all the attributes of job satisfaction. However, the level of dissatisfaction is smaller than less satisfied. Long working periods tend to make employees feel at home in an organization because they have adapted to their environment so that employees feel comfortable in carrying out their job (Dorrian, Baulk, & Dawson, 2011; Saleem, 2015).

Most respondents in the study were civil servants and were not satisfied with all the attributes of job satisfaction. However, the level of dissatisfaction is smaller than less satisfied. There is a difference in job satisfaction between permanent employees and contract employees, in which contract employees tend to feel less satisfied. The majority of respondents were

married and were not satisfied with all the attributes of job satisfaction. However, the level of dissatisfaction is smaller than less satisfied. Married employees are more productive, are less absent, have lower turnover, and are more satisfied with the job. Marriage makes increased responsibilities so that the value of work becomes valuable and important. There is a relationship between marital status and internal work motivation on salaries, but there is no relationship on overall job satisfaction.

The expectations of every employee are different, so management must understand what is expected by employees (Boies, Fiset, & Gill, 2015). Expectations are classified into two types, namely desired expectations and adequate expectations (Saleem, 2015). The desired expectation is the customer's expectations about what the product or organization must do that produces the product (goods or services) (Nottage, 2015). Meanwhile, the adequate expectation is a tolerance that can be accepted by customers against the deviation of products or services provided by the organization (Frese, 1982; Makeham, et al. 2016). The expectations of each customer are actually in the range between adequate expectations and desired expectations. From the results of identifying the gaps obtained, in the medical group, the biggest gap of the job satisfaction attribute was in the attribute of HR empowerment and the sub-attributes of the proactive management attitudes to seek feedback from employees. In the nursing staff group, the biggest gap of the job satisfaction attribute was in the attribute of communication and sub-attribute of the proactive management attitude to seek feedback from employees. In the pharmaceutical group, the biggest gap of the job satisfaction attribute was in the attribute of communication and the freedom attribute to express opinions and ideas, the freedom attribute to send suggestions or input, the freedom attribute to make complaints, the sub-attribute of proactive management attitude to seek feedback from employees, the sub-attributes of mutual trust between employees and management, and the sub-attributes of security guarantees in the workplace. In other health and non-health workers group, the biggest gap of the job satisfaction attribute was in the attribute of the HR

empowerment and the attribute of the work environment and the sub-attribute of services.

Based on the analysis using the Cartesian matrix, the communication attribute is a job satisfaction attribute with the highest value of dissatisfaction compared to other job satisfaction attributes and has the most sub-attributes included in the improvement priority.

### LIMITATION OF THE STUDY

Job satisfaction is a positive or negative attitude reflected by employees both inside and outside of work. Job satisfaction is one's emotional response to work situations and conditions that can be either satisfied (positive) or dissatisfied (negative). Job satisfaction can be felt by employees after comparing what is expected of their work with the reality obtained from their work. Based on the theory of discrepancy, a person will remain satisfied with his work if he has fulfilled various needs, desires, hopes, and values. Individuals vary greatly in meeting their needs in terms of achievement, status, security, and social contact. Therefore, not all jobs can meet the needs of every employee. By knowing the needs of employees, management can choose employees who have needs that are consistent with the demands and characteristics of the job.

### CONCLUSION

Cartesian matrix is a procedure to show the relative importance of various attributes to the performance of an organization or company, and draw a map of the organization's services to employees that can be used as a guide to improving employee management in an organization. Based on the analysis by the Cartesian matrix, the attribute of communication is the job satisfaction attribute having the most sub-attributes that go into the improvement priority.

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