# Construct Validity Of The Job Satisfaction Among Lecturers: An Analysis Of Confirmatory Factors

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**Abstract:** Employee job satisfaction is an important factor that must be considered every organization. This study aims to determine job satisfaction at lecturers at University of "X", test the validity and reliability of construct job satisfaction scale, to know the contribution of aspects and indicators in reflecting job satisfaction, and test the theoretical model of job satisfaction fit with empirical data. The population of this study amounted to 402 lecturers with characteristic status as a permanent lecturer, has worked at least 1 year and male and female sex. The sample size is 202 subjects. Subjects consisted of 119 (58.9%) women and 83 (41.1%) men. Sampling technique using probability sampling is by simple random sampling. Methods of data collection using job satisfaction scale. Data analysis using Structural Equation Modeling (SEM) with 2nd Order CFA through Lisrel program 8.80. The result of the analysis shows that the lecturer at University of "X" has job satisfaction in high enough category. Job satisfaction is reflected by the aspect of the job itself, salary, promotion, supervision, and colleagues are valid, significant and reliable to measure job satisfaction. The most dominant aspect that reflects job satisfaction is the aspect of promotion, with indicators are justice gained to get promotions and opportunities to get promotions. The lowest aspect that reflects job satisfaction is the job itself that is the perception of its work and the individual's feelings toward the job. The theoretical model of job satisfaction variables is fit with empirical data. The main fit model criteria used in testing the suitability of this model are Chi Square p, RMSEA, NFI, NNFI, CFI, IFI, GFI, AGFI.

**Keywords:** 2nd Order CFA, Coworkers, Job Satisfaction, Job Itself, Promotion, Salary, Supervision

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## 1   INTRODUCTION

There are many factors that an organization must consider to improve the employee performance, one of which is related to employee job satisfaction. Job satisfaction is the level of emotional response towards the work resulted from an individual's opinion of the work based on individual values [1]. The job satisfaction reflects an employee's feeling and attitude towards a job  [2]. Employee job satisfaction can determine how smooth the work of an organization is in achieving its goals. According to Tuhumena [3] the low level of job satisfaction will lead to organizational and productivity disruption due to the high level of lateness, absenteism, and employee turnover. Mangkunegara [4] stated that job satisfaction is related to turnover, absenteeism, age, level of profession, and the size of the organization/company. As for example, the high level of employee job satisfaction will be associated with low turnover and absenteeism, and vice versa. Tiffin [5] proposed that job satisfaction is closely related to employees' attitudes toward their work, work situations, and cooperation between leaders and employees. Job satisfaction is one's evaluation of the work and work context, and is perhaps the most learned attitude in organizational behavior. This evaluation includes an assessment of perceived job characteristics, work environment, and emotional experience at the workplace [6]. According to Lussier, as cited by Kaswan [7] the high level of job satisfaction is a hallmark of good organizational management. Meanwhile, the low level of job satisfaction is a cause of employee rallies/protests, performance decline, absenteeism, employee lateness, and high turnover. On the other hand, the high job satisfaction level gives positive feelings toward the job and other things related to it. When the employees feel satisfied with their job, they will give their best to finish their work.

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Job satisfaction is a person's negative or positive perspective on his job [8]. Job satisfaction is a pleasant feeling resulted from the perception that one's work meets the essential value of the work [9] and reflects the extent to which people find satisfaction in their work [10]. Job satisfaction is a delightful feeling caused by the employee's perception that his effort to complete his work is an important (valuable) part of the job itself [11]. Thus, considering the importance of the job satisfaction, it is necessary to know the aspects and indicators that contribute to job satisfaction variables on employees. Smith, Kendall and Hullin [12], [13] mentioned five aspects of job satisfaction which include aspects of the work itself, namely attitudes which include employee perceptions of his work, employee's emotional reaction to his work, opportunities to learn in his work and acceptance of job responsibilities. The content of the job itself is a source of satisfaction: for example, interesting work, challenging work, and career development which can support employee job satisfaction. The aspect of salary, which covers an employee's perceptions of salary, and emotional reactions of employee to the salary received because the individual has completed his work. The employees see salary as an illustration of how their leaders assess the employees' contributions to the organization. The aspect of promotion, which is the general attitudes that include employees perceptions of promotion by their leader, employees emotional reactions to aspirations, fairness or opportunities for growth, that include the promotion of obtaining education, responsibility, and opportunity. Promotional opportunities have different effects on each employee. It is because promotion has different forms and rewards. The aspect of supervision, which is the general attitude that covers employees perception, reaction, and emotion towards the supervision quality and leadership style of their leader. It also covers the extent to which the leader pays attention to employees personally, cares for the employees, and the opportunity to participate in decision making. The last is the aspect of coworkers, which is the general attitude that includes employees' perception towards their coworkers within and organization. Friendly coworkers and working groups that are willing to work together and help each other are the source of individual job satisfaction.
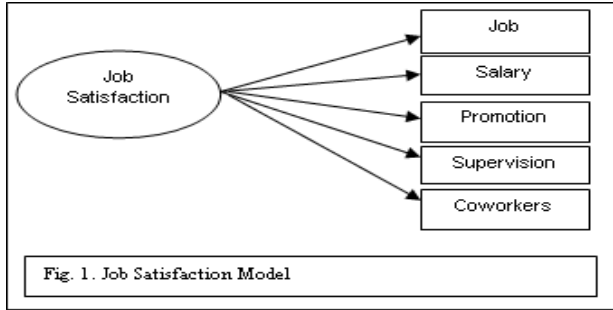
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*Fig. 1*. Job Satisfaction Model

In the Structural Equation Modeling (SEM), the measurement model is done by the Confirmatory Factor Analysis (CFA) [14]. The CFA measurement model is based on Joreskog and Sorbom's CFA theory [15] and is used to test the unidimensional, validity, and reliability of the construct measurement model that cannot be measured directly. The CFA focuses on whether the indicators conceived in an appropriate unidimensional manner and which indicators are dominant in building the construct that is being studied [14]. This research uses the 2nd Order CFA which consists of the two-levels measurement model. The first level of analysis is done from the construct of latent aspects to the indicators, while the second level of analysis is carried out from the latent construct to the aspect construct [16]. Hendryadi and Suryani [14] added that the 2nd Order CFA is measured based on several dimensions or aspects and whether those dimensions or aspects still need other indicators to measure it. Therefore, it can be seen that job satisfaction among lecturers, construct validity and construct reliability of the job satisfaction, contribution of aspects and indicators of job satisfaction in reflecting/measuring variables of job satisfaction are the compatibility of model and data. The concept of job satisfaction with those aspects is chosen to test its measurement model because those aspects reflect the problems among the lecturers in University "X" so that in the end, the results of this research can test the theoretical model of job satisfaction variables whether they fit the empirical data or not. This research aims to illustrate the job satisfaction among lecturers in University "X" Yogyakarta, test the construct validity and construct reliability of the job satisfaction scale, determine the contribution of aspects and indicators of job satisfaction in reflecting the job satisfaction, and test the theoretical model of job satisfaction whether it fits the empirical data or not.

## 2 RESEARCH METHOD

This research involved 202 subjects which consisted of 119 (58.9%) females and 83 (41.1%) males. The number of subjects is sufficient for carrying out data analysis that uses LISREL, where it requires a minimum sample of 200 subjects [17]. The characteristics set for the research subjects were professors, permanent lecturers at University "X" Yogyakarta, have worked for at least 1 year, and must be males/females. Lecturers were used as the subjects because they have various types of work to do and various levels of salary. Furthermore, lecturers also have career paths, involve their coworkers and superiors at work, all of which are aspects in

the lecturers' job satisfaction. The instrument used in this research was the job satisfaction scale arranged by the authors based on Smith, Kendall and Hulin's aspects of job satisfaction [12], [13], namely the job itself, salary, promotion, supervision, and coworkers. There were 20 items in the job satisfaction scale which were measured using a differential semantic scaling model which had two contrary statements and assessment scores ranging from 1-5. The semantic differential is a refinement of the Likert scale. This scaling model was used because the items in the job satisfaction had dimensions of evaluation, potential, and activity that included the subjects' assessment related to the merits of work, such as their feelings toward their work or assessment of the work quality. The data were collected by filling paper-based instruments. The job satisfaction scale with the differential semantic scaling model is shown in the table 1 below:

### TABLE 1
#### EXAMPLE OF JOB SATISFACTION SCALE

| In my opinion, my job is……… | |
|---|---|
| Difficult | Easy |
| Challenging | Boring |
| Great | Embarassing |
| Regular | Irregular |

The aspects and indicators of job satisfaction are illustrated in the table 2 below:

### TABLE 2
#### ASPECTS AND INDICATORS OF JOB SATISFACTION

| No | Aspects | Indicators |
|---|---|---|
| 1 | Job | Perception of the job<br>The individual's feeling towards his job |
| 2 | Salary | Perception of the amount of salary received<br>Fairness in payment |
| 3 | Promotion | Fairness obtained to get a promotion<br>Opportunity to get a promotion |
| 4 | Supervision | Perception of the quality of supervision<br>The leader's style of leadership |
| 5 | Coworkers | Perception of coworkers<br>Efforts of the employees to help each other |

### TABLE 3
#### BLUE PRINT OF JOB SATISFACTION SCALE

| No | Aspects | Indicators | No. Item | Σ |
|---|---|---|---|---|
| 1 | Job | Perception of the job<br>The individual's feeling towards his job | 1, 2,<br>3, 4 | 2<br>2 |
| 2 | Salary | Perception of the amount of salary received<br>Fairness in payment | 5, 7<br>6, 8 | 2<br>2 |
| 3 | Promotion | Fairness obtained to get a promotion<br>Opportunity to get a promotion | 9, 11<br>10, 12 | 2<br>2 |
| 4 | Supervision | Perception of the quality of supervision<br>The leader's style of leadership | 13, 14<br>15, 16 | 2<br>2 |
| 5 | Coworkers | Perception of coworkers<br>Efforts of the employees to help each other | 17, 20<br>18, | 2<br>2 |

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|  | | | | | | 19 |
| Total Items | | | | | | 20 |

The constructs validity and reliability of the indicators of latent construct were made using the Confirmatory Factor Analysis (CFA) [16]. According to Hair, Black, Babin, and Anderson [18], in addition to the validity test, the reliability test could also be done in the Confirmatory Factor Analysis (CFA) by using the construct reliability. The validity and reliability tests of the instruments should be done so that this research could obtain valid and reliable data. In other words, this test was used to perform model measurements to describe how well the aspects and indicators can be used as instruments to measure latent variables [19]. in this research, the Confirmatory Factor Analysis (CFA) used the Second order confirmatory factor analysis (2nd Order CFA). The second order confirmatory factor analysis (2nd Order CFA) is a two-levels measurement model. The first level of analysis is done from the construct of latent aspects to the indicators, and the second level of analysis is done from the latent construct to the aspect construct [16]. The construct validity states that the instruments being tested are suitable to the theoretical concept [20]. The construct validity provides an overview of how the perfect results can be achieved using the theory-based measurement [18]. The construct validity test of the 2nd Order CFA was done by observing the factor loading value of (>0.5) and t value of (>1.96). Hair, Black, Babin, and Anderson [18] mentioned that the minimum factor loading value is 0.5. Meanwhile, the construct reliability is considered to be good if the Construct Reliability (CR) ≥0.70 and the variance extracted value is ≥ 0.50. The reliability is met if the construct reliability value shows > 0.70 [18]. In order to calculate the construct reliability, the following formulation is used.:

$$CR = \frac{(\sum SLF)2}{(\sum SLF)2 + (\sum e)}$$
$$VE = \frac{\sum SLF2}{\sum SLF2 + (\sum e)}$$

**Information:**
CR (Construct Reliability): Consistency of a measurement
VE (Variance Extracted) : The total number of variants in manifest variable that can be explained by latent variables
$\sum SLF$    : The standard amount of factor loading in each item
$\sum e$       : The amount of errors in each item
Wijayanto, [21]

The data analysis method used the Structural Equation Model (SEM) and was assisted with the Linear Structural Model (LISREL) version 8.71 by Joreskog and Sorbom [15] through the 2nd Order CFA. This research used the SEM due of its ability to put the latent variables into the analysis [18].

## 3   RESULTS AND DISCUSSION
The table 4 below shows the illustration of the research data:

**TABLE 4**
DESCRIPTIVE STATISTICS OF JOB SATISFACTION

|  |  | Job | Salary | Promotion | Supervision | Coworkers | Job Satisfaction |
|---|---|---|---|---|---|---|---|
| N | Valid | 202 | 202 | 202 | 202 | 202 | 202 |
|  | Missing | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean | | 3.9926 | 3.6968 | 3.5483 | 3.6188 | 3.9121 | 3.7537 |
| Median | | 4.0000 | 3.7500 | 3.5000 | 3.7500 | 3.8750 | 3.7500 |
| Mode | | 4.00 | 4.00 | 4.00 | 3.75 | 3.75$^a$ | 3.75$^a$ |
| Std. Deviation | | 0.63721 | 0.79759 | 0.88265 | 0.89748 | 0.69871 | 0.62555 |
| Variance | | 0.406 | 0.636 | 0.779 | 0.805 | 0.488 | 0.391 |

The above table shows that from the job satisfaction, the aspect of job has a mean of 3.9926, the aspect of salary has a mean of 3.6968, the aspect of promotion has a mean of 3.5483, the aspect of supervision has a mean of 3.6188, and the aspect of coworkers has a meant of 3.9121. The total mean of the job satisfaction is 3.7537. It means that the job satisfaction of the lecturers in University X is quite high. Lecturers are able to feel and have positive perception of the work done, salary received, promotions implemented by the university, as well as superiors and coworkers who support each other. Furthermore, the university also strives to improve its management so that it can provide job satisfaction to the lecturers. Lussier [7] explained that the high level of job satisfaction indicates that the organization has a good management. The 2nd Order CFA was done by observing the factor loading value of (>0.5) and t value of (>1.96). A factor loading of 0.50 or more suffices to explain the latent construct [18]. The data analysis was done using the LISREL program by observing the factor loading value (>0.5) and t (>1.96) which results are shown in the figure below:
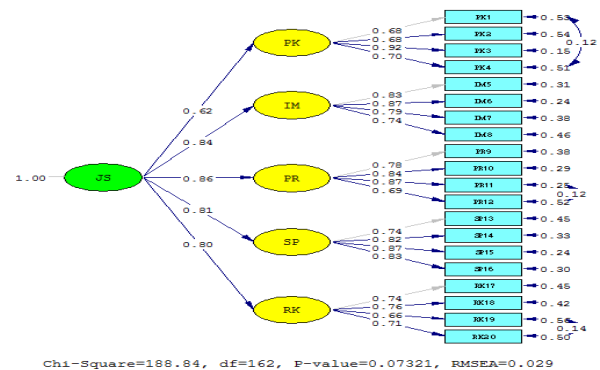


Chi-Square=188.84, df=162, P-value=0.07321, RMSEA=0.029

**Fig. 2**. The factor loading value of 2nd Order CFA of job satisfaction



Chi-Square=188.84, df=162, P-value=0.07321, RMSEA=0.029
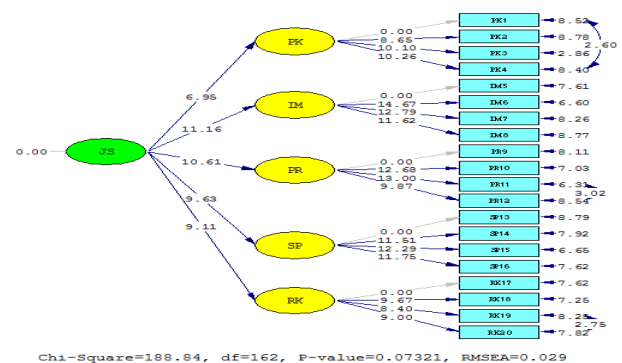
**Fig. 3.** The t-value of 2nd Order CFA of Job Satisfaction

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**Information:**
JS      : Job Satisfaction
PK      : Job
IM      : Salary
PR      : Promotion
SP      : Supervision
RK      : Coworkers

The first level of analysis is done from the construct of latent aspects to the indicators. Based on the above analysis results, all the factor loading values are >0.5 and all the t-values needed to test the significance of the factor loading value are bigger than 1.96. It means that from the 20 items that measure the job satisfaction, all of them are valid and significant items. The summary of those analysis results are shown in table 5:

**TABLE 5**
$2^{ND}$ ORDER CFA CONSTRUCT VALIDITY OF THE JOB SATISFACTION (ASPECT-INDICATOR)

| No. | Items | Factor Loading | T-Value | Information |
|---|---|---|---|---|
| 1 | PK1 | 0.68 | | |
| 2 | PK2 | 0.68 | 8.65 | Sig |
| 3 | PK3 | 0.92 | 10.10 | Sig |
| 4 | PK4 | 0.70 | 10.26 | Sig |
| 5 | IM5 | 0.83 | | |
| 6 | IM6 | 0.87 | 14.67 | Sig |
| 7 | IM7 | 0.79 | 12.79 | Sig |
| 8 | IM8 | 0.74 | 11.62 | Sig |
| 9 | PR9 | 0.78 | | |
| 10 | PR10 | 0.84 | 12.68 | Sig |
| 11 | PR11 | 0.87 | 13.00 | Sig |
| 12 | PR12 | 0.69 | 9.87 | Sig |
| 13 | SP13 | 0.74 | | |
| 14 | SP14 | 0.82 | 11.51 | Sig |
| 15 | SP15 | 0.87 | 12.29 | Sig |
| 16 | SP16 | 0.83 | 11.75 | Sig |
| 17 | RK17 | 0.74 | | |
| 18 | RK18 | 0.76 | 9.67 | Sig |
| 19 | RK19 | 0.66 | 8.40 | Sig |
| 20 | RK20 | 0.71 | 9.00 | Sig |

The second level of analysis is done from the latent construct to the aspect construct. The above table illustrates that the value of all factor loadings are >0.5 and all the t-values needed to test the significance of the factor loading are bigger than 1.96. The aspect of job (PK) has a factor loading of 0.62 and a t-value of 6.95; salary (IM) has a factor loading of 0.84 and a t-value of 11.16; promotion (PR) has a factor loading of 0.86 and a t-value of 10.61; supervision (SP) has a factor loading of 0.81 and a t-value of 9.63; coworker has a factor loading of 0.80 and t-value of 9.11. The summary of those analysis results are shown in table 6 below:

**TABLE 6**
$2^{ND}$ ORDER CFA CONSTRUCT VALIDITY OF THE JOB SATISFACTION (LATENT-ASPECT)

| No. | Aspects | Factor Loading | T-Value | Information |
|---|---|---|---|---|
| 1 | Job | 0.62 | 6.95 | Sig |
| 2 | Salary | 0.84 | 11.16 | Sig |
| 3 | Promotion | 0.86 | 10.61 | Sig |
| 4 | Supervision/Leader | 0.81 | 9.63 | Sig |
| 5 | Coworkers | 0.80 | 9.11 | Sig |

The results show that the five aspects of job satisfaction that consist of job, salary, promotion, supervision/leader, and coworkers are valid and significant to measure the latent variable of job satisfaction. The validity results are also supported with the Chi Square (r) value of 188.84 and the p-value of 0.732 (p>0.05). Based on the calculation formula of the reliability construct, the results are CR = 0.97 and VE = 0.61. It shows that the job satisfaction variables have good reliability.

**TABLE 7**
$2^{ND}$ ORDER CFA CONSTRUCT RELIABILITY OF JOB SATISFACTION

| No. | Items | Factor Loading | Errors | CR | VE |
|---|---|---|---|---|---|
| 1 | PK1 | 0.68 | 0.53 | | |
| 2 | PK2 | 0.68 | 0.54 | | |
| 3 | PK3 | 0.92 | 0.15 | | |
| 4 | PK4 | 0.70 | 0.51 | | |
| 5 | IM5 | 0.83 | 0.31 | | |
| 6 | IM6 | 0.87 | 0.24 | | |
| 7 | IM7 | 0.79 | 0.38 | | |
| 8 | IM8 | 0.74 | 0.46 | | |
| 9 | PR9 | 0.78 | 0.38 | | |
| 10 | PR10 | 0.84 | 0.29 | 0.97 | 0.61 |
| 11 | PR11 | 0.87 | 0.25 | | |
| 12 | PR12 | 0.69 | 0.52 | | |
| 13 | SP13 | 0.74 | 0.45 | | |
| 14 | SP14 | 0.82 | 0.33 | | |
| 15 | SP15 | 0.87 | 0.24 | | |
| 16 | SP16 | 0.83 | 0.30 | | |
| 17 | RK17 | 0.74 | 0.45 | | |
| 18 | RK18 | 0.76 | 0.42 | | |
| 19 | RK19 | 0.66 | 0.56 | | |
| 20 | RK20 | 0.71 | 0.50 | | |

Next, the model fit is overall good. The main criteria of the Model Fit are Chi Square p, RMSEA, NFI, NNFI, CFI, IFI, GFI, AGFI [18]. They are shown in table 8:

**TABLE 8**
CRITERIA OF MODEL FIT

| No. | Fit Index | Value | Standard Value | Information |
|---|---|---|---|---|
| 1 | Chi Square p | 188.84(P = 0.073) | >0.05 | Fit |
| 2 | RMSEA | 0.029 | <0.08 | Fit |
| 3 | NFI | 0.97 | >0.90 | Fit |
| 4 | NNFI | 1.00 | >0.90 | Fit |
| 5 | CFI | 1.00 | >0.90 | Fit |
| 6 | IFI | 1.00 | >0.90 | Fit |
| 7 | GFI | 0.91 | >0.90 | Fit |
| 8 | AGFI | 0.89 | >0.90 | Not Fit |

The analysis results indicate that 7 out of 8 indexes state that the model fits. The results show that the theoretical model of the job satisfaction variables fits the empirical data. The results also imply that the lecturers in University X have high job

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satisfaction because the aspects and items that stimulate the job satisfaction are valid and reliable. So, all the aspects and indicators are able to reflect and create the job satisfaction. The factors such as job, salary, promotion, supervision, and coworkers can contribute to the job satisfaction of the lecturers. There are several researches that support this finding, Sarjana [22] showed that supervision contributes to the job satisfaction among teachers. In line with that, the leadership style of supervisor or supervision is also related to teachers job satisfaction [23]. Job satisfaction can also be felt through promotional opportunities provided by the organization because it stimulates personal growth so that employees can be more responsible and can improve their social status [24]. In addition, employees also work to meet the needs of social interaction, so that when they have coworkers who support and cooperate with one another, their job satisfaction can be improved. George and Jones [25] suggested the need for relationships (relatedness needs), where the emphasis is on the importance of inter-individual and social relations. The most dominant aspect that reflects the job satisfaction is the promotion, in which its main indicators are fairness and opportunity to get promotion. Individual emotional perceptions and reactions to aspirations, fairness or opportunities to develop that include the promotion for getting education, opportunities, and promotions carried out fairly, professionally, transparently and selectively. The least dominant aspect that reflects the job satisfaction is the job itself, in which its main indicators are an individual's perception and feeling towards his job. The specific behavior is that the lecturers enjoy and are proud of their work, and even love challenging jobs although those jobs have lower aspects of salary, promotion, supervision, and coworkers, yet those aspects are still able to reflect the lecturers job satisfaction. The results of this research are different from the previous research on job satisfaction. Mustafa and Sylvia's research [26] showed that the most dominant aspect of the job satisfaction is the job itself, where it lies on the personal perception of an employee towards the job itself. Mustafa and Sylvia's research results are contrary to this research results which state that the aspect of job reflects the lowest job satisfaction among employees. The high job satisfaction among lecturers in University X indicates that the university has a good management where it can provide the best job satisfaction for the employees. Lussier [7] explained that the high job satisfaction is a characteristic of a well-managed organization. Employees who are satisfied with their job will likely to work as well as possible. The employees' performance are influenced by job satisfaction [27]. Lawler [28] proposed that the employees are satisfied with certain aspects of their job, such as coworkers, superiors, wages, salaries, etc, if the fields they handle are in accordance with what they should have obtained because they have done the same work portion as what they actually got. The fulfilled job satisfaction will motivate the employees to improve their performance. Ferreti and Argentero [29] stated that the factors forming job satisfaction are important for employees in the hierarchy of work organization. The results of their research showed that the factors of satisfaction consist of salary, information, relationships with superiors and career development. Thus, the job satisfaction among lecturers in University X is reflected and illustrated in five forming-aspects namely the job, salary, promotion, supervision, and coworkers. Those aspects are expected to improve the performance of the lecturers in University X. Tobing [30] mentioned that job

satisfaction factors can affect employee performance in an organization. Janicijevic, Kovacevic, and Petrovic [31] supported the above results of factor analysis. They mentioned that there are three major factors of job satisfaction: manager/leader; coworkers who can work reliably and build good communications; and the job itself. Further researches can use the instrument from this research to examine job satisfaction, especially among lecturers because the results of this research have proven that aspects and items of job satisfaction are able to reflect the variables of job satisfaction. In addition, the factor of organizational culture also needs to be considered in choosing the aspects of job satisfaction. This is important because the subjects in this research have a distinctive organizational culture embedded as a value that must be applied in work.

## 4 CONCLUSION

The second order confirmatory factor analysis (2nd Order CFA) test on the job satisfaction scale shows that the job satisfaction scale is valid and reliable. Therefore, the Indonesian version of job satisfaction scale can be used maximally as a tool to measure job satisfaction among employees. Job satisfaction can be reflected in five aspects, namely the job itself, salary, promotion, supervision, and coworkers. The most dominant aspect that reflects the job satisfaction is the promotion, in which its main indicators are perception towards the amount of salary and fairness in getting the salary. The salary motivates those lecturers to work, the salary received is also felt appropriate and satisfying, and the university is able to provide fair salaries that are in accordance with applicable regulations.

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