

Relationship Between Job Characteristics, Job Satisfaction And Productivity In The Citarum River Restoration agencies, West Java, Republic Of Indonesia

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Abstract: It has been more than 30 years since the Government of Indonesia and the Regional Government of West Java Province carried out a program to restore the Citarum River, where the water was brown and dirty with garbage, and had chemical smell due to the domestic and chemical waste from the surrounding factories. The restoration work, which was focused solely on developing infrastructure, was proven ineffective in rehabilitating the river to its former and functioning role as an ecosystem for the living things nearby. Against this background, this study hypothesizes that the restoration work of the Citarum river can be more productive through the job design for the employees, namely job characteristics, in the Citarum restoration agencies. Thus this study was conducted on the relationship between job characteristics, job satisfaction and productivity amongst employees in the Citarum restoration agencies in Bandung, Karawang and Bekasi, West Java. A sample of 283 respondents were collected and using SEM- analysis, the results of the studies indicated that the job characteristics and job satisfaction are the factors that have significant effects to increase the productivity in the restoration agencies of Citarum River with a value $t_{value} 4.42 (>1.96)$; whilst the job satisfaction variable has an influence on productivity with value $t_{value} 9.600 (>1.96)$. Thus the study concluded that the job design such as job characteristics with the increase in job satisfaction as a mediator has a significant effect on the productivity of employees in the restoration work of the Citarum River.

Keywords: Job Characteristics; Job Satisfaction; Productivity; Citarum River.

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I. Introduction

Infrastructure development, as a form to generate economic growth, has become the priority for a developing country like Indonesia. Infrastructure means economic and social progression are supported, and it is an essential element when overcoming a problem, such as the restoration project for the Citarum River.

When the Citarum River restoration program began with an infrastructure development, it sparked contentious discussions. Many were of the opinion that the river showed little to no change and remained dirty, smelly and toxic. This caused social science observers to step in and suggest a shift in the focus to employee empowerment and job design in the development process, including the restoration of the Citarum River. The infrastructure development then becomes part of the empowerment-based development. Sodjiran (1983, p. 24) further strengthens this opinion with the argument that community participation is especially important if the main source of pollution in the Citarum River is human actions. This means the people around Citarum River must participate in the river's rehabilitation. Community participation plays an important role in community-based development (Michael M. Cernea, 1988, p. 13). It was argued that The Citarum River restoration program will not be successful if the focus is solely on infrastructure development. The effort should be accompanied by empowerment and increased participation of the community.

Social scientists such as Frederick Herzberg (1959), and Hackman & Oldham (1976) emphasized the importance of human empowerment through design theory, motivation, job characteristics and job satisfaction. Studies by Salancik (1977), Timpe (1989), Gomes (2000), Stave M. Jex (2002), Barbara (2005), Kreitner and Kinicki (2005), Robbins and Judges (2007), Robbins, Stephen P. and Mary Coulter (2007); stressed that motivation and design theory are related to job characteristics, job satisfaction and productivity. There are five dimensions job characteristics, which are task variety, task identity, task significance, autonomy, and feedback. On the other hand, the dimensions of job satisfaction are, achievement, recognition, the work itself, responsibilities, and progress.

II. Literature Review

1.1. The Role of Job Characteristics and Motivation

Historically and empirically, job characteristics and job satisfaction theories are part of the form and motivation theories as well as the management of human resources discipline (Hackman & Lawler 197; Hackman & Oldham 1980 ; Frederick Taylor 1959)). Motivational theory which was developed in 1950, is the process of the intensity, direction, behavior, actions and perseverance of each individual that lead to the achievement of a goal (Wexley and Yukl, 1992, p. 98). Motivation is not only in the form of an action, but in movement and speech too (Suradinata, 1996, p. 130). Because of its semi-abstract nature, motivation is perceived as something that is difficult to measure, but possesses an important position in work environment. It is an aspect that must be owned by every worker and manager (Wahjosumidjo, 1994, p. 173).

Studies on job characteristics have been widely carried out, even in the days of Frederick Herzberg (1959) and Hackman and Oldham (1976), where it was marked by the birth of many theories. At the same time, various empirical studies have also been conducted in order to indicate and develop the role of job characteristics from various perspectives. Conceptually, job characteristics with its five dimensions i.e task variety, task identity, task significance, autonomy and feedback are the internal aspects of a work that refer to the content and conditions of a job. The greater the level of job characteristics is in a job, the greater the likelihood that workers will be more motivated and gained satisfaction in carrying out their work (Robbins in Hadyana Pujaatmaka, 2006, p. 64-66) reinforced by Samuel (2003, p. 75). For Robbins and Judge (2007, p. 268) these five dimensions of job characteristics describe a job design that is more oriented to the importance of managing human resources. This view is supported by Kreitner and Kinicki (2005, p. 264), both who emphasize that the work characteristics model attempts to explain an effective situation and work planning (work design).

Work form is an important factor in management, especially in operations. This is because in addition to dealing with productivity, it also involves labour. This shows that work form cannot be separated from work characteristics theory (Samuel, 2003, p. 75). Thus, conceptually, job design theory, motivation theory such as job satisfaction and performance theory have interrelated relationships. Hackman and Oldham (1980) , whose opinion stress that job characteristics are related to human actions and attitudes (Terry, 1977, p. 390). This view is logical and grounded because humans, with all their actions, are the most valuable asset. Human actions and work characteristics are all part of human existence.

Job characteristics are an effective approach in work design as through its dimensions, each worker will automatically understand the nature of the work, assume responsibility for the work, and gain knowledge of the work. This condition will affect work motivation internally, increase work satisfaction and improve the quality of performance, and (Berry and Houston in M. Surya, 2008, p. 36). Other conditions include increasing self-confidence in cultivating skills and task interests, authority with responsibility, and confidence in decision-making process (Ni Made Gunastri, 2009, p. 14). According to Simamora (2004, p. 129) this condition is called job enrichment. In Hackman and Oldham's opinion (1980), job can be described as having its own character. If the level of job dimensions increase, it will cause the level of motivation such as job satisfaction and achievement to also increase (Munandar, 2001, p. 357). As such the job characteristics theory of Hackman and Oldham (1980) is described as behavioral a science theory based on objective research on human behavior in organization and group units.

1.2. The Role of Work Characteristics Theory on Work Satisfaction and Productivity Improvement

The main idea of job characteristics theory introduced by Hackman and Oldham (1980), is how the work structure can influence workers' behavior and attitudes toward work conditions. Hackman and Oldham (1975, p. 53) posits work structures, or five dimensions of job characteristics capable of developing motivation and productivity. It has been argued that job characteristics are internal aspects of a job that refers to the content and conditions of a job. The greater the level of task characteristics in a job is, the greater the likelihood that workers will be more motivated and feel satisfied in carrying out their work (Samuel 2003, p. 75). As such job satisfaction is the attitude that workers have about their work, and it is the result of their perception of work itself (Gibson, 2007, p. 106).

Each dimension of work core includes a large aspect of work material that can affect a person's job satisfaction. Herzberg (1959) asserted that employees who are intrinsically motivated will enjoy jobs that allow them to use their creativity and innovation. Contrarily, workers who are more motivated by extrinsic factors tend to see what the organization can offer them, which in turn would result in their performance to be heavily intervened and directed by the organization. This motivation theory is reinforced by the results of empirical studies from Mohammad Sapt (2015), resulting in the formulation that job characteristics have a positive influence on Organizational Commitment, with a beta coefficient of 0.203 and a sig value of 0.000 < 0.05.

III. Methodology of Research

1.3. Determining Population and Sample

Quantitative studies on the social phenomena on the restoration of Citarum River are based on the views of postpositivism with the characteristics of causal determinism, and reductionism on the change of job characteristics, job satisfaction and productivity. Variable measurements and theory testing are continuously adjusted according to objectivity principles to produce generalization studies in deductive approach.

The determination of the sample was conducted through Stratified Random Sampling technique. 3 out of 12 districts chosen were located around Citarum River area consisting of Bandung, Karawang and Bekasi. The population of 1100 is made up of government, non-government and society members. The total number of samples was 283 (285 persons), based on Krecjie and Morgan table analysis (1970).

Table1 : Population and Research Sample

Institution (Government and Non-Government)	Total Institution	Number of Existing Institutions	Total Number of Staff	Sample (Stratified Random Sampling)
DLH Provinsi Jawa Barat	1	1	20	5
DLH District	10	10	70	18
Community Facilitator/FM	90	90	90	23
NGO/CSO Environment	40	40	200	51
TKM	224	144	720	186
Total	365	285	1100	283

1.4. Questionnaire Testing

The procedure for testing the questionnaire which was administered through a survey, was carried out through reliability tests. All of the results were declared valid based on the rcount and rtable values.

1.4.1. Reliability Test

The formula for calculating Cronbach's alpha reliability coefficient is as below:

$$\alpha = \frac{k}{k-1} \left[1 - \frac{\sum_{i=1}^k S_i^2}{S_T^2} \right]$$

value at the output:

Description:

α = alpha coefficient from Cronbach

k = number of questions
 S_i^2 = the score range of questions
 S_T^2 = total score range

Table2:First Composite Reliability Model

Construct	Composite Reliability
Skill variety	0.711
Task identity	0.776
Task significance	0.795
Autonomy	0.798
Feedback	0.769
Work satisfaction	0.824
Productivity	0.839

Table 2 shows that composite reliability values for all constructs above 0.7 indicate that all constructs in the estimated model meet the discriminant validity criteria. The lowest composite reliability value of 0.711 is the variety skill construct (SV). Reliability tests can also be reinforced with Cronbach's Alpha. Cronbach's Alpha value for all contracts is not all above 0.6. The "high reliability" extract was work satisfaction (0.736) and productivity (0.712), while the other extracts are declared "fairly reliable".

Table3:Reliability Test Results

Variable	Reliable Value	Description
Job Characteristics	0,514	Very Reliable
Work satisfaction	0,645	Reliable
Productivity	0,652	Reliable

Source: 2016 Primary Data Results

Reliability test is done by looking at the composite reliability value of the indicator that measures the construct. The result of composite reliability will show a satisfactory value if it is above 0.7. Here is the composite reliability value on schedule 3.

Table4:Second Composite Reliability Model

Variable	Composite Reliability
Job characteristics	0.834
Work satisfaction	0.823
Productivity	0.839

Table 4 shows that, the composite reliability value for all constructs is above 0.7, indicating that all the constructs in the estimated model have met the discriminant validity criteria. The lowest composite reliability value is 0.823 in work satisfaction construct.

1.4.2. Validity Test

The formula used in the validation test of the research instrument is shown:

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n(\sum X^2) - (\sum X)^2][n(\sum Y^2) - (\sum Y)^2]}}$$

- R = The coefficient validity
- n = Number of respondents
- x = Score of respondents' answers
- y = Total score of variables for respondents

All indicators are declared valid because they have a loading factor above 0.5 against the intended construct and have met the convergent validity. The following is a diagram of the loading factor for each indicator in the study model. The latent construct results of the indicators as seen in diagram 1 are shown to be appropriate.



Diagram1:Loading Factor Value

In addition, another method to study discriminant validity is by looking at the value of the square root of average variance extracted (AVE). The recommended value is above 0.5. Below is the value of AVE in this study.

Table5: Average Variance Extracted (AVE)

Construct	Average Variance Extracted (AVE)
Skill variety	0.461
Task identity	0.540
Task significance	0.659
Autonomy	0.574
Feedback	0.527
Work satisfaction	0.486
Productivity	0.634

1.5. Relationship Analysis between Variables

The relationship between the variables was analyzed through Statistical analysis of Structural Equation Modeling (SEM). With this analysis it is found that: 1) R-square; 2) Adj R-square; 3) Composite Reliability; 4) Cronbach alpha; 5) Average Variance Extrac / AVE; 6) Full Collin VIF; and 7) Q-squared. The framework of the study is shown in diagram 1, while the structural model of job characteristics, job satisfaction, and productivity is shown in diagram2.

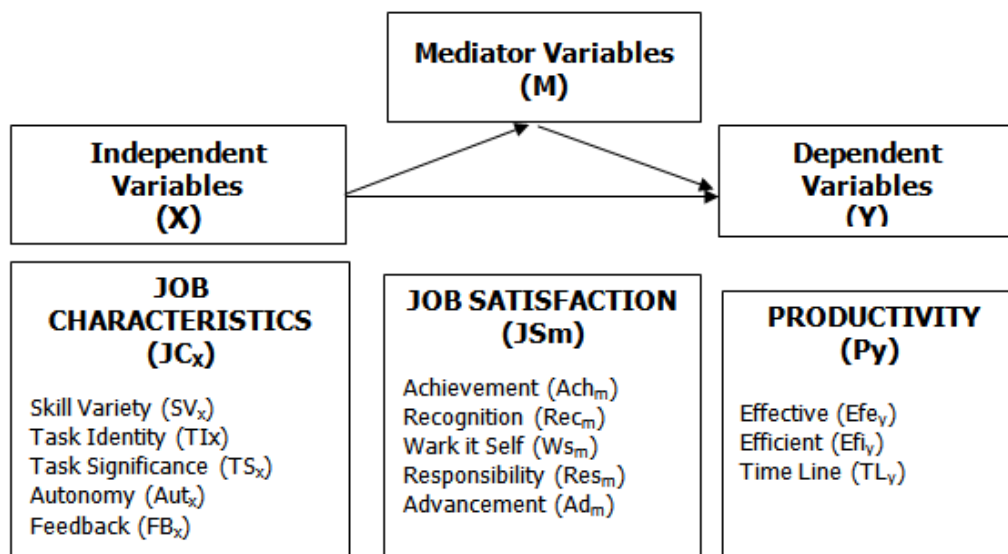


Diagram2 : Structural Model of the Relationship Among Work Characteristics, Work satisfaction and Productivity

This determination is supported by the development of analytical models relating to social sciences, including the management of human resources. Another consideration for the use of this type of SEM is because it is seen as a combination of regression and factor analysis. SEM can still produce estimates even for relatively small size samples and deviations from the multivariate normality. In addition, SEM techniques provide several advantages in cluster analysis and multidimensional scaling (Hair et al., 2013, p. 2). Schumacker and Lomax (1996) and Ding et al. (1995) in Usman Dahlan (2014, p. 142-143) asserted that, the advantages of SEM can be used for relatively small size samples. The sample for this study was more than the standard of sufficiency. The sample of 283 people could be said to represent the population (Harbani Pasolong, 2012, p. 112). 3 indicators measured each dimension and construct.

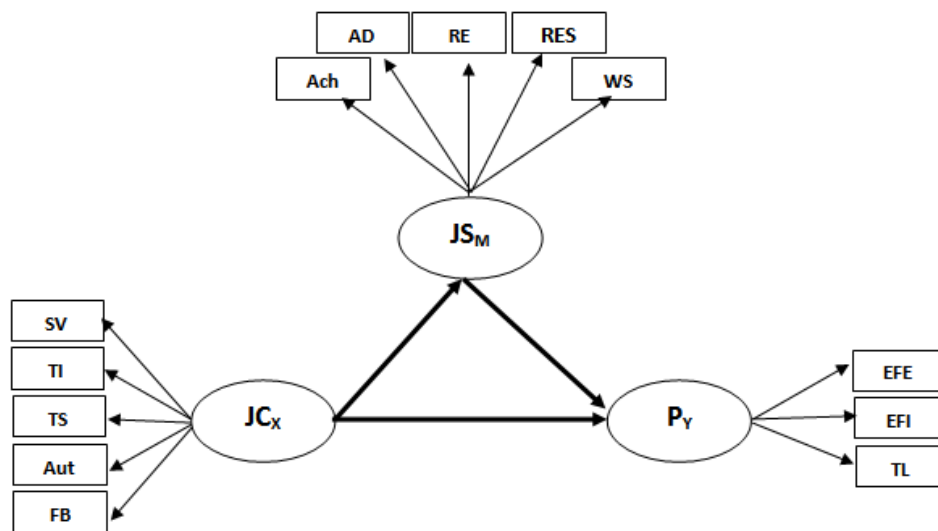


Diagram2: Structural Model of the Relationship Among Work Characteristics, Work satisfaction and Productivity

IV. Results and Discussions

1.6. The Influence of Work Characteristics Variables on Work Satisfaction

The dimensions of job characteristics are an integral whole which if enabled, can influence the model and quality of the form that can explain the situation and design of work more effectively (Kreitner and Kinicki, 2005, p. 264). The results show that the five dimensions have an average value above 4 (table 3). Overall, all respondents agreed on the importance of the five dimensions of job characteristics, in increasing job satisfaction and productivity.

Table5: Average Scores Based on Dimensions of Work Characteristics

Dimensions	Average Scores			Coefficient Test t ¹
	Government NGO/CSO	Community dan KSM	(FM	
Skill Variety	4.38	4.21		18.275**
Task Identity	4.40	4.52		3.706
Task Significance	4.30	4.29		5.397
Autonomy	4.15	4.08		0.028
Feed Back	4.30	4.22		11.295**

Descriptions: **very obvious for p value < 0.05

Skill Variety. Based on Table 4.2, there is a significant difference between the dimensions of diversity of expertise from the Government and NGOs and community groups (4.38: 4.21). It means that the Government and NGOs have the characteristics and/or expertise and capabilities that are more popular than the Community Facilitators (FM) and the Community Team Work (TKM). Capabilities here refer to the ability to design, plan detailed activities, prepare budget, sources of fund and others.

In order for community participation to be more objective in managing the recovery of Citarum River, various community skills need to be improved, for example, through training or technical guidance and the likes. Concerted efforts among the government, NGOs and the community is a positive strategy that must be developed so that there is a unified objective in carrying out task management. Shared perception among stakeholders is a positive outcome from the participation process (Suparjan and Hempri, 2003, p. 55).

The participation of all parties in a development is very important, especially by the community that will be affected directly from it. With participation in planning, execution, and other aspects of management, people will have more confidence in development programs, and they will be more cognizant with all things related to the activities (Diana Conyers, 1991, pp. 154-155). This is in line with the idea that through participation, there is an effort to contribute to the success of the program in accordance with the capabilities of everyone without sacrificing self-interest. (Mubyarto, 1997, p.35).

Worker's capacity is very important and the requirements are marked by the ability in knowledge, skills and behavior. The higher the capacity is, the stronger and more powerful the effort will be. This is empowering because it generates potential, resources, and opportunities in shaping the future (Suparjan and Hempri, 2003, p. 43).

Task Identity.In task identity dimension, there is a glaring difference between government & NGO with FM & TKM (4.40: 4.52). This means the element of society is of a higher degree in integrity compared to the government element on the identity of the task. The public, in this case TKM and FM, agree that they are clear on a part of the work. Besides having complete understanding of the procedures in completing all the work, and they also have an obligation to always improve their perception of the desired final form, and the objective of the work.

Task Significance. Results of the calculation show that there is a difference of one point between the elements of the government (government and NGOs) and elements of society, which in this case are represented by FM and TKM (4.30: 4.29). For government element, work is seen as a medium for self-development. Work done by employees is perceived as a form of contribution to the organization and also to other parties. In this aspect, FM and TKM stated the same thing.

The very minute difference between all of the respondents gives the meaning that their actions can be useful for self-development to the institution and also other parties. In this case, the intrinsic motivation of each respondent is very dominant, which means that, if the task at hand feels useful, the level of satisfaction will be higher. For this task, it certainly cannot be felt directly, especially with regard to knowledge. In the case of the recovery of the Citarum River, self-development cannot be immediately felt, but what can be sensed is its effects on the river rehabilitation.

Autonomy.On autonomy side, there is a real difference between government& NGOs, with FM & TKM as representatives of the community (4.15: 4.08). Government and NGOsthat are responsible for a program is more responsive to the appeal of the community regarding the importance of finding and developing strategies for completion, control and management of work. This is different with FM and TKM, where their autonomy is relatively loweras they are more prone to wait for directions from the government. In terms of the implementation of the work, it can be ascertained that the elements of society are the most prevailing.

Feedback.For the dimension of feedback, there is a tangible difference between the governmentand NGOs to that of FM and TKM (4.30: 4.22). This shows that all the efforts generated by the community still need responses from the government and NGOs as they are policy makers. The community has so far been unaware and lacking in confidence whether what they have done is compatible or not with the design.

Hypothesis Testing

The results of hypothesis testing using SEM-PLS note that the change in work characteristics has a significant effect on the change in work satisfaction.

Table 6:Hypothesis Test of 5 Dimensionsof Work CharacteristicsAgainst Work satisfaction

Influence	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV)	Significance
Skill variety→Work satisfaction	0.152	0.168	0.060	2.542	Significant
Task identity→Work satisfaction	0.158	0.157	0.077	2.042	Significant
Task significance→Work satisfaction	0.212	0.214	0.053	3.963	Significant
Autonomy→Work satisfaction	0.154	0.147	0.061	2.506	Significant
Feedback→Work satisfaction	0.289	0.282	0.055	5.241	Significant

Table 6 shows the effect of each job characteristics dimension on work satisfaction based on original sample, sample mean, standard deviation, and TStatistics. Based on the original sample estimate value, it is understood that the highest value that influences work satisfaction is feedback of 0.289, while the smallest is a variety skill with a value of 0.152.

The influence path from five dimensions of work characteristic to work satisfaction is shown in figure 3 below.

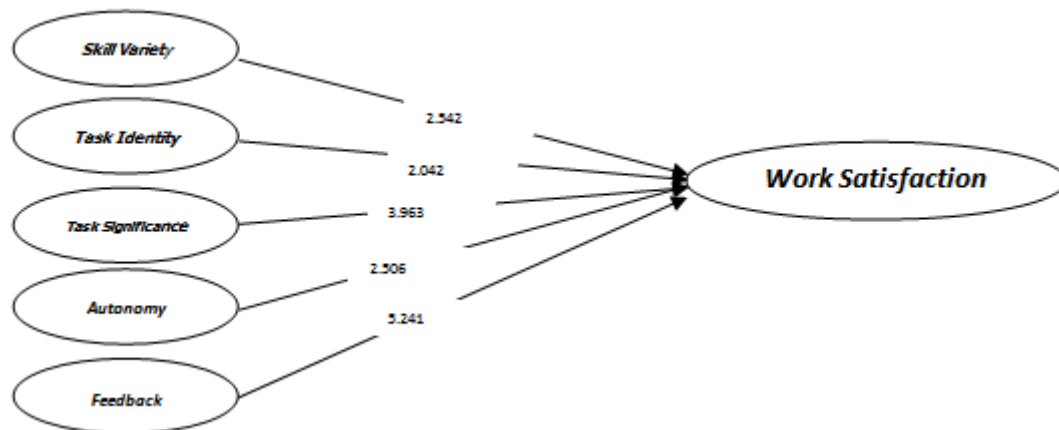


Diagram 3: Path Diagram on The Effect of Five Dimensions of Work Characteristics on Work satisfaction

Based on diagram 3, the influence of each dimension of work characteristics on work satisfaction can be explained as follows:

1) The influence of various skills on work satisfaction (H_1)

The influence of skill variety on work satisfaction is significant with T-statistics of 2,542 (> 1.96). The original sample estimate value is positive with a value of 0.152, which indicates that the direction is positive.

The results of this study are in accordance with Frederick Herzberg (1959) which emphasizes that various skills and abilities are significant stimuli on the growth of work satisfaction and motivation. This condition is reinforced by Stoner (1991: 59) and Hackman and Oldham (1976, 250-279), and Agung Panudju (2003: 7), which emphasizes that every task requires different skills and different ways of working. Therefore, the results are significant (T-statistic of 2.542 \Rightarrow 1.96) from the testing on the effect of various expertise on productivity, which was carried out by current studies and are in line with the opinion of Stoner (1991), Hackman and Oldham (1976), and Agung Panudju (2003).

Furthermore, the study of Mohammad Hadi Asgari (2013) concluded that there is a significant relationship between the variety of skills towards internal motivation ($p < 0.01$). Various skills are also good predictors and most effective in internal motivation (62.1%). Dewita Study Heriyanti (2007: 20) asserted that various skills possessed by workers are meaningful and carry impact.

However, it is important to note that, this emphasize on various skills does not mean applying them without any rule. Every job has its own features, therefore the various skills applied must be in accordance with those features. Relevant expertise include: (1) Developing participation; (2) Developing Cooperation and Partnerships; (3) Arranging Design; (4) Preparing Job Plan; (5) Identifying Problems and Requirements; (6) Modifying Society's Bad Behavior; and (7) Increasing the Capacity of communities and workers through various forms of empowerment-oriented training, discussion, and assistance.

2) The Influence of Job Identity on Work satisfaction (H_2)

The influence of Job Identities on Work satisfaction is significant with T-statistics of 2,042 (> 1.96). The original sample estimate value is 0.158, which indicates that the direction is positive. Thus the H_2 hypothesis in this study which states there is influence of Job identity on Work satisfaction is accepted, and the statement that posits there is no influence from Job identity on Work satisfaction is rejected.

Hackman and Oldham (1976, pp. 250-279) state that job identity is the whole process of the work, from start to finish, that provides visible results. Stoner, (1991, p.59) calls it a complete aspect of a task, and not just a single part of the whole work. Identity of the task is also very important for the motivation of the worker, both from physical, psychological, social, cognitive and emotional point of view (Shahrul et al., 2011) and (Agung Panudju, 2003, p.7). This means that with job identification, employees will gain satisfaction because they understand the substance and nature of the task itself.

The opinions of the experts above are reinforced by Agung Panudju's study (2003), which resulted in the formulation that shows task identity has a significant influence on work satisfaction using multiple linear regression models at a significance level of $p = 0,000$ ($p < 0.05$), $F_{count} = 9,116$ which is greater than F_{table} (2.709), and the overall correlation coefficient (R) is 0.586 or 58.6%.

3) The effect of task significance on job satisfaction (H₃)

The influence of task significance on job satisfaction is significant with T-statistics of 3,963 (> 1.96). The estimate value of the original sample is at 0.212, which indicates that the direction is positive. Thus the H₃ theory that states task significance influences work satisfaction is accepted, and that the statement that there is no influence from task significance on work satisfaction is rejected.

The results of this study are consistent with the opinion of Stoner (1991, p. 59) and Hackman and Oldham (1976, p. 16, p. 250-279) which emphasize that the significance of the task can provide worker satisfaction, especially if his work contribute meaning to the organization. Likewise, the results of Agung Panudju's study (2003, p. 7) emphasize the significance of the task as identical to the effect of one worker's task on another.

One aspect that must be considered on task significance, especially in the case of Citarum River recovery, is whatever work put in must bring positive outcomes to the rehabilitation of Citarum River. Among the actions that can directly benefit the restoration of the river include: (1) Forming a Citarum River Caring Community; (2) Forming a policy to safeguard the river from pollution; (3) Creating campaigns to educate factory owners and the community to not dispose garbage and waste into the river; (4) Apply sanctions and law against individuals who violate the rules; and (5) Awarding individuals who genuinely care for the recovery of the Citarum River.

4) The Influence of Autonomy on Job satisfaction (H₄)

The influence of autonomy on work satisfaction is significant with T-statistics of 2.506 (> 1.96). The value of the original sample estimate is positive at 0.154, which indicates that the direction is positive. Thus H₄ statement that says there is influence from autonomy to work satisfaction is accepted, and the suggestion that autonomy has no influence on work satisfaction is rejected.

The results of this study support the opinions of Stoner, Hackman & Oldham, and Agung Panudju. Stoner (1991, p. 59) asserts that autonomy is giving substantial freedom, independence, and wisdom to individuals in scheduling and determining work procedures. Hackman and Oldham (1976, p. 16, p. 250-279) refer to autonomy as a form of freedom in controlling the execution of their duties based on the description and specifications of the work imposed on them. Agung Panudju (2003, p. 7) on the other hand asserts autonomy can create a sense of responsibility. Autonomy is the most dominant variable in influencing work satisfaction. This can be seen from the value of p (significance) of the independent variable of autonomy to work satisfaction of 0.015 which means $p < 0.05$.

An important factor to note in autonomy is that, it is not a free pass for workers to do anything. Instead, it means freedom in: (1) Self-controlling the performance of duties based on the description and job specification imposed on him; (2) Freedom to design work process to meet the objective of a task; (3) Freedom to design planning that is encourages participation and empowerment; (4) Freedom to complete work on a basis of participation based on the results of the study; and (5) Freedom to choose strategy for effective, efficient, and timely purposes.

5) The Influence of Feedback on Job satisfaction (H₅)

The influence of feedback on job satisfaction is significant with T-statistics of 5,241 (> 1.96). The value of the original sample estimate is positive at 0.289, which indicates that the direction is positive. Thus H₅ which states that there is an influence from feedback on work satisfaction is accepted, and the statement that feedback has no influence on work satisfaction is rejected.

The results of this study are in line with the opinion of Stoner and Hackman & Oldham who stressed that understanding through direct information is needed in completing work effectively and efficiently. (Stoner, 1991, p. 59) and (Hackman and Oldham, 1976, p. 16, p. 250-279).

For workers and stakeholders involved in solving work problems, including the restoration of the Citarum River, the dimension feedback is very important. Feedback from other parties not directly related to the job should also be taken into account as their observation is more objective and impartial. (Parker et al., 2001).

As an input for the feedback dimension, it is important to identify the time and individuals that can provide feedback and the appropriate time to do it. Other inputs in question are: 1) Feedback can be done periodically or anytime; 2) The main sources of feedback are community leaders, experts in the field, co-workers, the government, non-government organizations, universities, funding institutions, practitioners, and the members of the community itself; and 3) Important feedback must be used as a guide at work.

6) The Influence of Job Characteristics on Job satisfaction (H₆)

The analysis result on the hypothesis of the influence of job characteristics on job satisfaction can be as shown in diagram 4 below.



Diagram 4: Path Diagram on The Influence of Work Characteristics on Work satisfaction

Diagram 4 emphasized that the influence of job characteristics on work satisfaction is significant with T-statistics of 11.06 (> 1.96). The value of the original sample estimate is positive at 0.661, which shows a positive direction.

The results of this study do have relevance to previous studies by experts. Work Characteristics are internal aspects of a job that can generate motivation and satisfaction in carrying out work (Robbins in Hadyana Pujaatmaka, 2006, p. 64-66) which is reinforced by Samuel (2003, p. 75). Work characteristics are very important because they are oriented towards managing human resources (Robbins and Judge, 2007, p. 268). This view is supported by Kreitner and Kinicki (2005, p. 264) who posit that work characteristics model attempts to explain an ineffective work situation and work design. Berry and Houston in M. Surya (2008, p. 36) and Munandar (2001, p. 357) emphasize that work characteristics can improve the quality of performance, and increase work satisfaction.

This study also supports the previous research of Franciscus Jefri Otmo (2013) and Yusniar Lubis (2012) that concludes job characteristics have effects on job satisfaction. The coefficient path for work characteristics variable is 0,237 with $t_{count} = 3.436$ at the significance of $0.001 < 0.05$. The result of this analysis shows that job characteristics have a significant effect on job satisfaction and the influence is at 23.7%.

7) The Influence of Work satisfaction on Productivity (H₇)

The influence of work satisfaction on productivity can be shown through diagram 5 below.

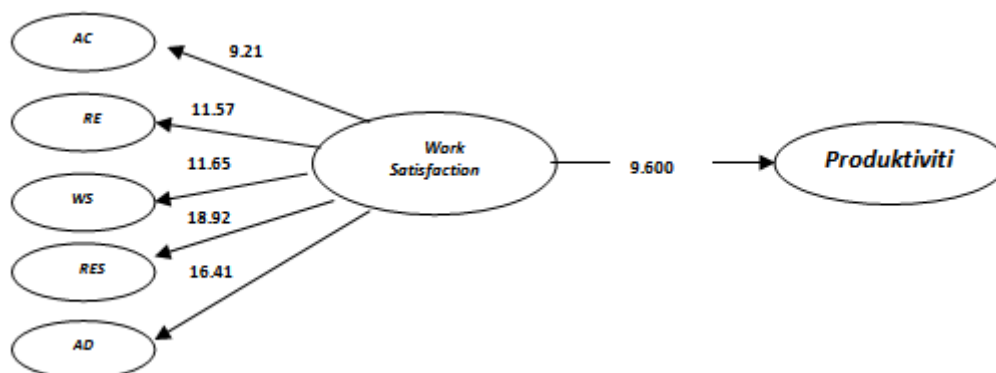


Diagram 5: Path Diagram on Job satisfaction Factor on Productivity

Based on diagram 5, the formulation for job satisfaction shows a significant effect on productivity with t_{count} of 9.600 (> 1.96). The five indicators of job satisfaction are Achievement/AC, Recognition/RE, Work it Self/WS, Responsibility/RES and Advancement/AD), and they have a t_{count} greater than 1.96 (loading factor > 0.5). The value of the original sample estimate is positive at 0.535, which indicates that the direction is positive. The SEM results through the model stressed that there is a real influence on job satisfaction with its 5 dimensions on work productivity that gives the outcome of R Square value 0.51 (table 4.6). It means that the

influence between work satisfaction and productivity is only 51%. 49% is influenced by other factors not tested in this study. This 51% falls into the relatively medium category, and it affirms that there are still many factors that can affect productivity.

The results of this study are consistent those of Jürges (2003, p. 88), Stave M. Jex (2002, p. 131) and (As'ad, 2004, p. 104) who view work satisfaction as a level of positive feeling workers have to their job. Therefore, work satisfaction is seen as a contributing factor to a fulfilling life (Newstrom and Davis, 2002, p. 208). It is also important for actualization. Workers who do not attain work satisfaction will never reach psychological maturity, and in turn will become frustrated. Strauss and Sayles in Handoko (2001, p. 196).

Workers who are satisfied with their job will be happier and more productive with their work than employees who are less satisfied. (Locke in Munandar, 2001, p.350). The findings of Prasetyo and Wahyuddin (2008) conclude that if employees are satisfied with the work conditions that include support from the organization, it can affect the increase in productivity with estimation value (0,132) and P-value = 0,036.

There are several input that must be considered, namely: 1) Work satisfaction cannot be separated from work characteristics. The reason is that work satisfaction will only be obtained if work characteristics are met; 2) Work satisfaction can be influenced by the organization's climate; 3) Work satisfaction can be obtained through of policy support; 4) Work satisfaction can be gained though physical support and non-physical supports, aspects such as good human resource management; and 5) Work satisfaction also occurs due to good work design.

8) The Influence of Work Characteristics on Productivity with Mediation of Job satisfaction (H₈)

The influence of work characteristics on productivity mediated by job satisfaction can be confirmed through diagram 6 below.

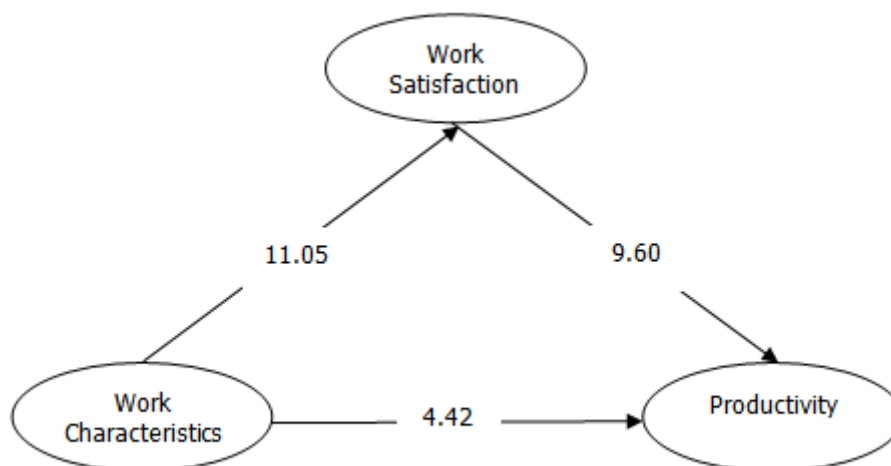


Diagram6: Path Diagram on the Influence of Work Characteristics on Productivity through Work satisfaction

Based on diagram 6, it can be formulated that Job Characteristics variables and Job satisfaction variables have significant effect on productivity with tcount of 4.42 (> 1.96). The original sample estimate value is positive at 0.251, which indicates that the direction is positive.

The results of this study are in line with Hackman and Oldham's (1980) motivation theory which confirms that if a job contains dimensions of work characteristics, it can generate motivation. Referring to the two factors motivational concepts of Herzberg, Hackman and Oldham's, they identified internal work motivation, which can encourage or drive high performance and productivity. The greater the conditions of the job characteristics dimension are, the higher the motivation, achievement, work satisfaction, and productivity will be (Hackman and Oldham, 1980).

Other inputs that must be considered in achieving productivity are: 1) An effective and efficient process characterized by improvement so that it becomes better, safer, cheaper and faster. (Umar Husein, 2004, p. 9), (Henry Simamora, 2004, p. 612); 2) Completing work faster or in accordance with the plan (Henry Simamora, 2004, p. 612); and 3) job characteristics, job satisfaction, and productivity, can be achieved and fulfilled if stated in the work form.

V. Conclusions and Implications

Based on the explanation given above, especially in the literature review and research results, the study arrived at 3 conclusions as shown below:

- 1) The development approach must be oriented towards increasing human capacity and human empowerment, because humans or society are the main goals of development. This approach is in line with the people-centered development;
- 2) The placement of human aspects in the center of the development emphasizes the importance of human empowerment, namely the role of humans to actively participate and the ability to actualize all their potential in dealing with internal and external problems;
- 3) A program that is empowered with people-centered development principles can be formulated based on work characteristics and work satisfaction. This means: 1) Increasing community participation at the Planning, Implementing, and Managing stages of the program; 2) Increasing capacity and awareness; and 3) Encouraging the government to provide support in the form of regulations or the likes, which is in favour to the community for the purpose of a sustainable development.
- 4) The main principles of development, especially in the recovery of Citarum River in the West Java Province of Indonesia, can be carried out at a low cost by building awareness of the community or river users, to continuously maintain the river's quality. The river can be clean and beautiful again, albeit not the same as before, if the community refrains from polluting the river with garbage and chemical or domestic waste. The community must be aware that the river is not a dumping place for all things toxic and harmful, and that it should always be treated with care.

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