

# The Effect of Incentives on Employee Productivity with Teamwork as a Moderation Variable

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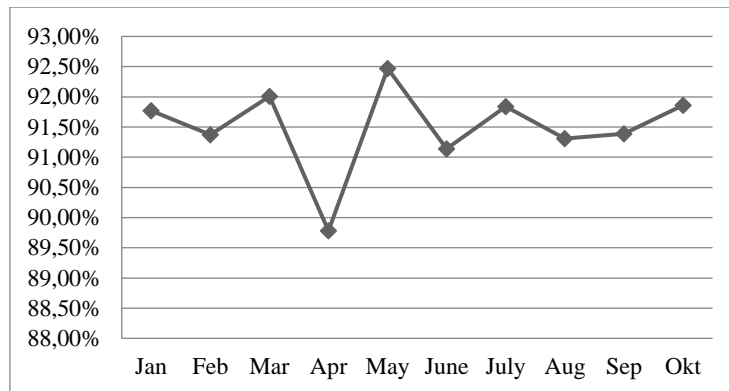
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**Abstract.** The purpose of this study was to ascertain the relation between companies providing incentives and increasing employee productivity. The study involved teamwork as a moderation variable to determine whether teamwork strengthens or weakens the effect of providing incentives on employee productivity. This research is a quantitative study on Perumda Air Minum Tirto Negoro Sragen Regency employees with a population of 263 employees. The data obtained are then analyzed using the structural equation modelling (SEM) method to determine the relation between the examined variables. This study suggests increasing employee productivity through incentives provided to employees with moderated teamwork.

**Keywords:** Incentives, Employee Productivity, Teamwork, Structural Equation Modeling

## 1 Introduction

The company's primary goal is to make a profit. In realizing the company's goals, it requires good management of its resources. In managing human resources, many factors are considered, such as performance, satisfaction, loyalty, productivity, and others. Productivity is the ratio of output to input in a certain period [1]. Work productivity is the ratio of the output or results of work to the input or resources used in the production process by humans or non-humans[2]. This research focuses on employee productivity, especially for employees of Perumda Air Minum Tirto Negoro Sragen.



**Fig. 1** Productivity Graphic

The graph above shows the productivity level of Perumda Air Minum Tirto Negoro Sragen employees in January-October 2023, as seen from the customer billing target. The graph shows that the level of employee productivity has yet to reach the company's target of 94%. Low productivity can be influenced by many things, such as salary, bonuses, leadership style, organizational culture and structure, motivation, rewards, sanctions, collaboration or cooperation, and others [3].

This low level of productivity of employees will affect the company. Providing proper compensation for employees can increase productivity. In this study, the compensation in question is incentives. Incentives are a form of compensation the company provides in financial form through additional income. According to Hasibuan[4], incentives are additional compensation for employees who meet the achievement targets set by the company. Incentives are used as a fair medium for companies to compensate employees. Incentives are material or non-material rewards employees receive to increase employee motivation to be more productive[5].

Incentives are not fixed or changeable. Providing incentives can motivate employees to work optimally. Providing incentives serves to encourage and provide responsibility for employees. It is hoped that employees can make maximum efforts to realize company goals by providing incentives. The purpose of providing incentives is to encourage employees to improve the quality and quantity of work as expected by management[6].

Previous research by Utarindasari & Silitonga showed that labor productivity is significantly impacted by incentives [7]. Similar results were also shown in research conducted by [8] and [9]. [But in research conducted by Tanjung & Nafis the results obtained are different, namely incentives do not affect employee productivity[10]. This shows a research gap in inconsistencies in research results, so more research needs to be done on the effect of incentives on employee productivity.

Additionally, teamwork also contributes to work productivity[11]. According to [12], teamwork is a group of people who collaborate on tasks and have the same position and interests. Teamwork is the implementation of work carried out together to complete the work

more efficiently and effectively. Good relationships, understanding of work, and communication skills are needed in cooperation.

Teamwork is the implementation of work carried out in groups, and groups must have responsibility for work, communicate with intensive group members, focus on work, and be responsive to reach company targets. The goals of forming a team is that the work can be done better than alone [13].

Research conducted by [14] and [15] showed that teamwork can act as a moderator in the relations between the independent and dependent variables in the study. However, previous studies have not examined the effect of teamwork as a moderating variable on the relationship between incentives as an independent variable and employee productivity as the dependent variable. The use of teamwork as a moderating variable in research shows novelty or renewal from previous research.

## 2 Research Method

This research was conducted using quantitative research methods. Quantitative research methods are carried out to determine the relationship between variables and other variables and to measure how they affect[16]. This research was conducted during October 2023 and included research preparation, data collection, data processing, and completion of research reports. This research is located at Perumda Air Minum Tirto Negoro Sragen. The location was chosen because interesting phenomena will be studied further and because it is relevant to the research gap.

In this research, productivity is dependent variable. Then, incentives and teamwork are independent variables. Besides, teamwork also acts as a moderating variable in the relationship between incentives and productivity. All variable measurements in this study have been adapted to previous research. The indicators are described in Table 1.

**Table. 1 Indicator & Instrument**

Indicator	Instrument
	Incentives[17]
Intangible incentives	<p>Personal compliments and acknowledgements are given to employees by their manager or boss.</p> <p>Personnel are given various training programs and educational courses to help them develop their skills.</p> <p>When it comes to work arrangements, management is understanding and accommodating.</p>
Tangible incentives	<p>If an employee performs well on the job, the employee's base salary is boosted.</p> <p>Employees are given traditional, established performance pay incentives.</p> <p>Employees are rewarded for their creativity and innovative ideas.</p>

Productivity [18]

Work quantity	Each day, I put in a lot of work.
Efficiency	I complete tasks in a timely and efficient manner.
Work standard	I set high standards for task completion.
Work quality	My work outputs are high quality.
Target	I consistently outperform our group's targets.

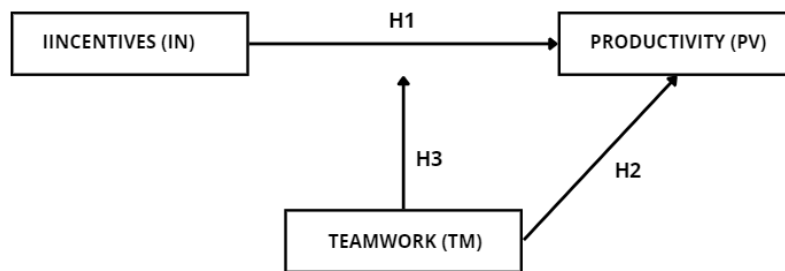
Teamwork [18]

Help each other	My team members assist one another in completing tasks.
Close to each other	My team members are very close to one another.
Respect each other	My team members respect one another.
Work well together	My team members get along well.
Encourage each other	My team members motivate one another to complete the task successfully.
Work hard	My team members working really hard to complete tasks.

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According to Arikunto, population is the whole of the parts or elements selected as the object of research[19]. Population in this research were workers at Perumda Air Minum Tirta Negoro Regency, consisting of 263 employees. Sample is a subset of the population chosen as a representation of the number and characteristics of the entire population, which is the object of research[20]. Thus, the sample used must truly represent the characteristics of the population under study. The use of samples in a study aims to solve problems faced by researchers, such as limited time, energy, and costs.

Data was collected using a non-probability sampling method that employs more targeted purposive sampling. Using the Ferdinand formula, namely the number of indicators multiplied by 5-10[21]. With 13 indicators, the number of samples obtained is 65 samples. Of the 65 respondents' answers obtained, which were then processed, 55 answers that met the criteria were obtained. The questionnaire method was used to collect data. The questionnaire using a Likert scale of 1-4. Using a 1-4 Likert scale aims to avoid bias in this study[22]. The data that has been collected is then analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. This method is used for modeling and estimate the complex relationship between the variables under consideration. [23]. The following is the research model used.



**Fig. 2** Frame of Mind

Research conducted by Daniel shows that providing incentives to employees has a positive effect on increasing employee productivity[5]. Not only providing incentives in financial form but employee participation in organizational/company decision-making also increases employee productivity. Research conducted by Utaridasari shows that partial Incentive programs improve productivity. Incentives have a major influence on increasing employee productivity in Tanjung & Nafis' research[10]. From the previous research that has been described, incentives have a direct positive effect on productivity.

H1: Incentives affect productivity

Several previous reasearch have been conducted to investigate the relation between teamwork and productivity. As in Padang & Sitorus, research shows that teamwork positively and significantly affects productivity[24]. In addition, research by Yanimansyah, Abdul, & Yusnawati shows that teamwork positively affects employee productivity[25]. Research by Ghen et al. also showed that teamwork affects employee productivity[11]. This implies that greater levels of teamwork created by employees, the higher the level of employee productivity. According to the previous research, teamwork has an immediate beneficial impact on productivity.

H2: Teamwork affects productivity

Moderating variables strengthen or weaken the relation among the dependent and independent variables. Some previous studies show that teamwork can act as a moderating variable. The research of Mukhtar et al. shows that teamwork plays an important role in enhancing the impact of transformational leadership on commitment of the company [14]. Other studies show that moderation plays a role in moderating the relation among perceptions of politics in organizations and work outcomes [26]. Based on this explanation, a hypothesis can be drawn that teamwork can moderate the relationship between incentives and productivity.

H3: Teamwork moderates the relationship between incentives and productivity

### 3 Results and Discussions

#### 3.1 Result

##### Descriptive Statistics

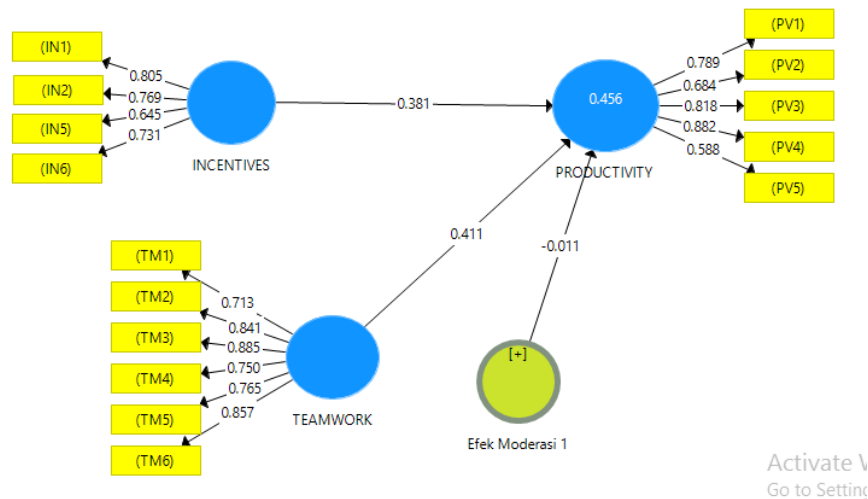
55 respondents met the criteria, 75% were male, and 25% were female. Regarding age, 32.9% were 19-34 years old, & 67.1% were 35-58 years old. The respondents' education is dominated by undergraduate (S1) at 57%, high school at 38.6%, and junior high school at 4.4%. The respondents' length of service is above 11 years with 44.3%, 4-6 years with 26.1%, 7-10 with 15.7%, and 1-3 years with 12.9%.

**Table. 2 Respondent characteristics**

Characteristic	Number	Percentage
Gender		
Male	48	73.85%
Female	17	26.15%
Age		
19-34 years old	46	70.77%
35-58 years old	19	29.23%
Education		
Junior High School	3	4.62%
Senior High School	25	38.46%
Undergraduate	37	56.92%
Work Experience		
1-3 years	8	12.31%
4-6 years	19	29.23%
7-10 years	10	15.38%
> 11 years	27	41.54%

### Outer Model

Data processing was done using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method in the SMART-PLS 3 application. The outer model is tested first in PLS-SEM testing to determine the validity and reliability of the data from the indicators used. [27].



**Fig. 3** Outer Model

The criteria in validity testing are the value of outer loading or discriminant validity and AVE. In testing the validity of the outer loading value of at least 0.04[23]. For the minimum AVE value of 0.05[23]. After testing the validity of the next step in testing outer loading, namely testing the reliability of the indicators used, which includes Cronbach's alpha & composite reliability. An indicator is valid if the Cronbach's alpha consider is above 0.06[23]. For composite reliability consider above 0.6[23],

From the data of respondents who meet the criteria and have been processed, it is found that in the incentive variable, several statements were found that did not meet the criteria in testing the outer model. So, a decision was made to delete statements that did not meet the criteria. The statements in question are IN3 and IN4. Neither statement meets AVE value, composite reliability, and Cronbach's alpha criteria. After the two statements were deleted, the results were obtained as in Table 1.

**Table. 3** Validity & Reliability

Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE	
Incentives	IN1	0.805	0.736	0.828	
	IN2	0.769			
	IN5	0.645			
	IN6	0.731			
Productivity	PV1	0.789	0.811	0.87	0.577

	PV2	0.684			
	PV3	0.818			
	PV4	0.882			
	PV5	0.588			
	TM1	0.713			
	TM2	0.841			
Teamwork	TM3	0.885	0.89	0.916	0.647
	TM4	0.75			
	TM5	0.765			
	TM6	0.857			

Table 1 presents the validity and reliability testing results, which is seen by outer loading, Cronbach's alpha, composite reliability, and AVE. Indicators are valid and reliable if the outer loading value is above 0.4, the Cronbach's alpha consider above 0.6, the composite reliability value is above 0.6, and the AVE consider above 0.5[23]. Table 1 demonstrates that all indicators used have met the validity and reliability criteria.

### Inner Model

The second is testing the inner model, which includes hypothesis testing and  $R^2$ .

**Table. 4 Path Coefficients**

Hypothesis	Variable Correlation	T Statistics	P Values	
H1	INCENTIVES -> PRODUCTIVITY_	2.981	0.003	Accepted
H2	TEAMWORK -> PRODUCTIVITY_	2.219	0.027	Accepted
H3	MODERATION EFFECT -> PRODUCTIVITY	0.065	0.948	Rejected

A hypothesis is accepted when P-Values is less than 0.05[23]. The results of hypothesis testing presented in Table 2, seen through the P values, it showed that H1 and H2 were accepted with P values below 0.05, namely 0.002 and 0.019. Meanwhile, H3 was rejected because the P Values value was above 0.05, namely 0.946.

**Table. 5 R Square**

	$R^2$	$R^2$ Adjusted
PRODUCTIVITY	0.456	0.424

Table 3 presents the  $R^2$  and  $Q^2$  values. The Adjusted  $R^2$  value of 0.434 means that incentives and teamwork predict the diversity of productivity by 42.4%.

### 3.2 Discussions



The results showed that incentives and teamwork had a positive and significant effect on productivity. The first independent variable, incentives, was seen from hypothesis testing through path coefficients, namely the P value; the value of 0.002 was obtained, meaning that incentives significantly affected productivity. Providing incentives carried out by the company had been carried out intangibly and tangibly. The company's incentives are annual bonuses, food allowances, awards, and training. So, to increase productivity, the provision of incentives need to be more optimal and follow the needs of employees.

Previous research, which also investigates the impact of offering incentives on productivity, backs up these findings. Research conducted by Daniel shows that providing incentives to employees has a positive impact on increasing worker productivity[5]. In addition, research conducted by Yuary shows that partial incentives have a positive effect on productivity[28].

This study shows that teamwork as an independent variable has a positive impact on productivity, as seen from the P values. A better teamwork relationship between employees can increase productivity. So, the company can improve employee teamwork by carrying out activities that are in accordance with this.

These results are supported by several previous studies, such as Padang and Sitorus' research, showing that teamwork has a positive and significant impact on productivity[24]. In addition, research by Yanimansyah, Abdul, & Yusnawati shows that teamwork positively affects employee productivity[25]. In research, Ghen et al. showed similar results that teamwork affects employee productivity[11].

Regarding the effect of teamwork in moderating the relationship between incentives and productivity, the results show that as a moderating variable, teamwork does not moderate the relationship between incentives and productivity. These results are seen from the P Values of the moderating effect of teamwork above 0.05, namely 0.946, which means that teamwork in this study acts as a moderating predictor.

Moderating predictors are moderating variables that do not moderate the relationship of other variables but influence the dependent variable[23]. These results are due to the phenomenon that exists in the research subject, namely that incentives are given to each employee individually and routinely without considering the level of cooperation between employees. So that this raises the result that teamwork does not affect the relationship between incentives and productivity. In addition, the researcher's observations show that work is carried out individually even though employees are placed in the same work unit.

## **4 Conclusions**

The introduction and literature describing incentives, teamwork, and productivity were presented at the beginning of the article. From this section, it explained that incentives and teamwork affected productivity. In addition, there was a suspicion that teamwork moderated the relationship between incentives and productivity. From the discussion presented in this study, incentives partially had a positive impact on worker productivity. Teamwork partially had a significant impact on productivity. At the same time, teamwork could moderate the

relationship between incentives and productivity, so the teamwork variable in the study was included in the moderator predictor.

The results provides advice to company management to provide regular incentives to employees to increase employee productivity. The provision of incentives in question includes financial and non-financial incentives, such as praise, awards, and competency training. In addition, companies can create programs or directions that can increase teamwork between employees in line to increase employee productivity.

The small sample size of samples and the limited research time are the study's limitations. Additional research could include increasing the number of samples and variables of interest.

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