


# Analysis of the Influence Compensation, Employee Engagement and Employee Welfare on Work Productivity in the Chemical Industry

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## ABSTRACT

This research aims to analyze the influence of compensation, employee engagement and employee welfare on work productivity in the chemical industry. This research is motivated by the importance of increasing employee work productivity to maintain competitiveness amidst increasingly fierce global competition and ever-changing market demands. With research variables, the Influence of Competence (X1), Employee Engagement (X2) and Employee Welfare (X3) on Work Productivity (Y) in the chemical industry. to employees in the Synthetic Resin production section. The method used is a quantitative method, the population of this research was carried out on production employees totaling 95 people who were used as samples. The sampling technique uses Slovin samples. Data were collected using a questionnaire with a Likert scale, namely asking respondents for statements regarding the respondent's level of agreement with the questionnaire statements. The data obtained was analyzed using multiple linear regression techniques to identify the relationship and influence of the three dependent variables on work productivity. The research results can be seen from the multiple correlation level value of 0.801, this shows that the correlation level has a very strong influence. The coefficient of determination value is 0.651, meaning that the variables Compensation, Employee Engagement and Employee Welfare on Work Productivity in the Chemical Industry are 65.1% and the remaining 34.9% is influenced by other variables not examined in this research. Meanwhile, the results of simultaneous hypothesis testing show a significant effect because  $F_{count} > F_{table}$  ( $56,578 > 3.10$ )

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## 1. INTRODUCTION

The chemical industry is one of the industrial sectors that has an important role in global economic development. This industry not only contributes to various products used every day but also influences other sectors such as agriculture, pharmaceuticals and manufacturing. With increasingly tight competition and market forces that have increasingly changed employee work productivity, it has become a key factor in maintaining business competitiveness in this industry.

One of the main factors that influences employee work productivity is compensation. [1]. Fair and competitive compensation not only attracts qualified employees but also motivates them to work more efficiently and efficiently [2]. Recent studies show that adequate compensation can increase work satisfaction and employee loyalty which in turn can increase productivity. [3].

Work productivity is an important indicator that reflects employee efficiency and efficiency in completing their tasks. In the chemical industry, work productivity is very crucial because this sector produces a high level of precision and reliability in the production process [4]. High productivity means the company is able to produce greater output with the same or even fewer impulses, which ultimately contributes to reducing operational costs and increasing profitability [5]. Factors such as employee skills, technology used and working environmental conditions initially influence work productivity [6].

Effective compensation not only depends on the size of the financial reward but also on the way in which the compensation is fully communicated and communicated to employees. Well-designed compensation should take into consideration individual performance, team achievements and market conditions to ensure that all employees feel valued and motivated [7]. In the chemical industry where innovation and efficiency are highly valued, compensation programs that combine performance-based incentives with non-financial rewards such as career advancement and encouragement can be more effective in increasing employee productivity and loyalty.

Employee engagement is also a crucial factor in determining work productivity [8]. The level of employee engagement or employee involvement describes the level of commitment and enthusiasm of employees towards their work and organization. Employees who are emotionally and cognitively involved have better performance, are more proactive and have lower absenteeism rates. This involvement is not only influenced by compensation but also other factors such as organizational culture, relationships with superiors and career development opportunities [9].

Employee involvement or employee involvement is a concept that describes the extent to which employees are emotionally and cognitively committed to their work and organization [10]. Employees who are involved not only complete their tasks, but also promote enthusiasm, initiative and spirit to contribute more to the organization. In the chemical industry where frequent work requires high focus and solid teamwork, employee involvement is very important. A high level of involvement can lead to increased productivity, creativity and operational efficiency which previously contributed to the company's competitive advantage.

Employee well-being is the third factor that is no less important in determining work productivity. Employee well-being includes physical, mental and social aspects. Employees who feel good overall well-being have better well-being, lower stress and higher life satisfaction, which in turn contributes to increasing work productivity.

Apart from physical and mental health aspects, social well-being also plays an important role. Employees who feel valued and have a good relationship with their co-workers and employee management are happier and more motivated, work balance programs including work hour flexibility and flexible culture policies can help employees balance work goals with personal and family health Melrelka. In the chemical industry where work demands can be very high, companies that pay attention to the social welfare of employees have seen an increase in employee loyalty, engagement and productivity. In this way, investment in employee well-being is not only beneficial for individuals but also for long-term performance and success.

In the last three years, the chemical industry has experienced various dynamics influenced by global factors such as the COVID-19 pandemic, changes in environmental policy and economic fluctuations [11]. At the start of the pandemic, the industry faced major challenges such as supply chain disruptions, reduced demand from various sectors and increased raw material costs. The chemical industry has also seen an increase in demand for products including cleaning agents, disinfectants and pharmaceutical raw materials that are in great demand to combat this pandemic, creating additional pressure but also the need for adaptation and innovation. [12]. As time goes by the chemical industry begins to recover and shows signs of growth. Global economic recovery and increased industrial activity are driving ultimate demand for various chemical products including specialty chemicals and industrial chemicals. [13]. Focus on sustainability and innovation [14] Green has become the main driver for the growth of this industry, chemical industry is increasingly investing in environmentally friendly technology including bio-based chemicals and more environmentally efficient production processes. This initiative not only helps reduce the carbon footprint but also creates new markets and increases the competitiveness of the increasingly growing green economy.

Based on the background of the research above, it can be concluded that the solution to the problem in this research is:

- a. How does compensation affect the productivity of chemical industry work?
- b. How do employee engagement affect the productivity of chemical industry work?
- c. How does employee welfare affect the productivity of chemical industry work?
- d. How do compensation, employee management and employee welfare impact productivity in the chemical industry?

This research has the effect of researching, analyzing and analyzing the results and making a complementary impact on the productivity of chemical industry work. Ulnlntulk know how to influence employee welfare on the productivity of chemical industry work. Ulnlntulk know the impact of compensation, employee management and employee welfare on work productivity in the chemical industry.

**2. METHOD**

This research method uses a quantitative approach with a focus on new discoveries through analysis or other measurements. The population of this study is the total number of employees in the production department in the chemical industry, numbering 95 units. The data was collected through interviews, cullllsilone llr presentations and observations by asking kulellsilone llr questions which revealed their validity and results. Data collection was continued with analysis using SPSS.

The hypothesis can be stated as a response to the problems presented in the research market. In the description of the problem, the conditions for this research can be formulated as follows.

- H01: P = 0: Dildulga will not have a compensatory effect on the productivity of chemical industry work.
- Ha1 : P = 0 : Dildulga has been found to have a complementary effect on the productivity of chemical industrial work.
- H02: P = 0: Dildulga will not have any effect on the productivity of the chemical industry.
- Ha2 : P = 0 : Dildulga has been found to have an impact on the productivity of the chemical industry.
- H03: P = 0: Dildulga will not have an impact on employee welfare on the productivity of chemical industry work.
- Ha3: P = 0: Dildulga has found an impact on employee welfare on the productivity of the chemical industry.
- H04: P = 0: Dildulga will not have a compensating effect or an environmental impact on the productivity of chemical industrial work.
- Ha4: P = 0: Dildulga has an impact on compensation, employee management and employee welfare on the productivity of chemical industry work.

Based on the results developed by the experts and pellnelllilitil tellrdahullul, the results developed by pellnelllilitil sell are as follows:

- a. There is an influence of complexity (X1) on work productivity (Y) in the chemical industry.
- b. This can have an impact on the performance of industrial processing (X2) on work productivity (Y) in the chemical industry.
- c. There is an impact on employee welfare (X3) on work productivity (Y) in the chemical industry.
- d. There is an impact of competency (X1), employee performance (X2) and employee welfare (X3) on work productivity (Y) in the chemical industry

**3. RESULTS AND DISCUSSION**

Based on the calculations of the SPSS version 26 program above, look at column R. The R value obtained is 0.807, which can be concluded that the relationship between Company (X1), Company Management (X2) and Employee Wellbeing (X3) towards Work Productivity (Y) is stated to be very strong because level at interval level (0.80 -1,000).

Table 1. Simultaneous Correlation Test

<b>Model Summary<sup>b</sup></b>					
Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.807 <sup>a</sup>	.651	.640	3.078	2.054

a. Predictors: (Constant), KESEJAHTERAAN KARYAWAN, KOMPETENSI, EMPLOYEE ENGAGEMENT

b. Dependent Variable: PRODUKTIVITAS KERJA

Table 2. Multiple Regression Test

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized
		B	Std. Error	Coefficients Beta
1	(Constant)	7.317	2.693	
	KOMPETENSI	.128	.092	.126
	EMPLOYEE ENGAGEMENT	.576	.118	.499
	KESEJAHTERAAN KARYAWAN	.242	.100	.252

a. Dependent Variable: PRODUKTIVITAS KERJA

Based on the results of the results of the multiple relationship analysis of the variables Competency (X1), Company Management (X2) and Employee Wellbeing (X3) regarding Work Productivity (Y), it can be concluded that:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3$$

$$Y = 7.317 + 0,128X_1 + 0,576X_2 + 0,242X_3$$

Work Productivity = 7,317 + 0.128 (Completion) + 0.576 (Employee Engagement) + 0.242 (Employee Welfare).

- The constant selbelsar value is 7.317, this states that Completion (X1), Elengagellemployeelel Elngagelmeint (X2) and Employee Wellbeing (X3) In relation to Work Productivity (Y) is selbelsar 0 (zero) then Y's Work Productivity is 7.317.
- The correlation coefficient value of Compeltelnsi
- The coefficient value of the Elmployeelel Elngagelmeint X2 relationship is selbelsar 0.576, meaning that for every additional unit of Elmployeelel Elngagelmeint X2 there will be an increase in the Productivity of Work Y which is selbelsar 0.576.
- The value of the correlation coefficient for Employee Welfare X3 is a total of 0.242, meaning that every time an increase in employee welfare X3 is added, there will be an increase in the Productivity of Work Y which is a value of 0.242.

Table 3. Simultaneous Determination Coefficient Test

**Model Summary**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.807 <sup>a</sup>	.651	.640		3.078

a. Predictors: (Constant), KESEJAHTERAAN KARYAWAN, KOMPETENSI, EMPLOYEE ENGAGEMENT

Based on the results of the simultaneous delevermination coefficient test, the values for the Company's Deltelmination Coefficiency (X1), Company Management (X2) and Employee Welfare (X3) regarding Work Productivity (Y) are equal or the value of R Square is 0.651. This means that the large contribution of Company (X1), Company Management (X2) and Employee Welfare (X3) to Work Productivity (Y) is 65.1%, the remaining 34.9% comes from other factors not examined in this research.

Table 4. Compensation T Test (X1) on Work Productivity (Y)

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.323	2.838		6.808	.000
	KOMPETENSI	.649	.081	.637	7.976	.000

a. Dependent Variable: PRODUKTIVITAS KERJA

Based on the calculations in the table above, a total calculation value of 7.976 was obtained with a Sig value of 0.000. Finally, when compared with the t-table value with an error rate of 5% with the value  $df = n - 2 - 1 = 95 - 2 - 1 = 92$  cells, a total value of 6,808 is obtained. The titulng value is  $7.976 > t_{table} 6.808$  then  $H_0$  is

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rejected and  $H_a$  is accepted, which means that there is a significant relationship between the Competency variable  $X_1$  and Work Productivity  $Y$ .

Table 5. Employee Engagement T Test ( $X_2$ ) on Work Productivity ( $Y$ )

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	11.063	2.586		4.279	.000
	EMPLOYEE ENGAGEMENT	.899	.075	.778	11.958	.000

a. Dependent Variable: PRODUKTIVITAS KERJA

Based on the calculations in the table above, a total value of 11,958 is obtained with a Sig value of 0.000. Finally, when compared with the t-table value with an error rate of 5% with the value  $df=n-2-1=95-2-1=92$  cells, a total t-table value of 4,279 is obtained. The titulng value is  $11,958 > t_{tabel} 4,279$  then  $H_0$  is rejected and  $H_a$  is accepted, which means that there is a significant relationship between the Employee Engagement variable  $X_2$  and Work Productivity  $Y$

Table 6. T Test of Employee Welfare ( $X_3$ ) on Work Productivity ( $Y$ )

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	12.037	2.956		4.073	.000
	KESEJAHTERAAN KARYAWAN	.695	.069	.724	10.123	.000

a. Dependent Variable: PRODUKTIVITAS KERJA

Based on the calculations in the table above, a total value of 10.123 is obtained with a Sig value of 0.000. Finally, when compared with the t-table value with an error rate of 5% with the value  $df=n-2-1=95-2-1=92$  cells, a total t-table value of 4,073 is obtained. Thitulng value  $10,123 > t_{tabel} 4,073$ . then  $H_0$  is rejected and  $H_a$  is accepted, which means there is a significant relationship between the variable Employee Welfare  $X_3$  and Work Productivity  $Y$ .

Tabel 7. Uji F Simultan

		ANOVA <sup>a</sup>				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.608.601	3	536.200	56.587	.000 <sup>b</sup>
	Residual	862.283	91	9.476		
	Total	2.470.884	94			

a. Dependent Variable: PRODUKTIVITAS KERJA

b. Predictors: (Constant), KESEJAHTERAAN KARYAWAN, KOMPETENSI, EMPLOYEE ENGAGEMENT

Based on the results of the study above, it is known that the F test using SPSS produces a total Fcount value of 56,587, compared to the F table obtained using the F table and the calculation  $df: (n-k-1)$  where  $n$  is the result and  $k$  is the number of independent variables ( $95-2-1=92$ ) then the Ftable value obtained from the  $n$  value 92 is 3.10). The results of the above calculations show that  $F_{hitung} > F_{tabel}$  is  $56,578 > 3.10$  with a Sig value of  $0.000 < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted, thus there is a significant influence between the variables Competence ( $X_1$ ), Employee Engagement ( $X_2$ ) and Employee Welfare ( $X_3$ ) Regarding Work Productivity ( $Y$ ).

#### 4. CONCLUSION

Based on the initiatives that have been implemented, the chemical industry's innovation and efficiency are highly valued, compensation programs that combine performance-based incentives with non-financial rewards such as promotions and career development opportunities can be more effective in increasing employee productivity and loyalty, including 40.6% of the results 59, 4% comes from other factors that are not included in the pellnellitilan ilnil. Routine recognition of employees' achievements and contributions also plays an important role in increasing the sense of belonging and involvement of 60.6% of which 39.4% resulted

from other factors that were not included in this study. Contribution to employee well-being (X3) partly related to work productivity Y sales, 52.4% of which resulted in 47.6% from other factors that were not considered in this study. In terms of overall compensation, employee performance and employee well-being on work productivity, the remaining 65.1% of the remaining 34.9% is due to other factors that were not investigated in the research. The number of boundaries that need to be implemented include a. The ultimate analytical factors for employee performance are limited to only 4 variables, namely compensation, employee performance and employee well-being on work productivity. However, there are many other factors that may affect work productivity that are not taken into account in the financial planning. The use of one-by-one sulmbellr data bellrulpa kulellsilonellr can produce a less than complete or accurate picture of the actual occurrence. Therefore, it is important to expand the data collection method by including interviews or information to provide a more in-depth and comprehensive insight into the topic under study. Based on the results of this research, the company provides recommendations including: ensuring that the compensation packages offered are competitive with industry standards to attract and retain quality talent. Consider periodic settlements based on individual performance, inflation and market conditions. Provide ongoing ongoing training programs to improve employee skills and knowledge. Clear career development opportunities will increase their commitment and involvement. Growth in environmentally friendly technology and sustainable production processes will ultimately reduce carbon footprints and contribute to regulatory developments as well as a market that is increasingly focused on sustainability. Implement a fair and transparent performance evaluation system to provide constructive feedback to employees. This helps employees understand areas for improvement and motivates them to ultimately achieve progress.

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